Excellence in Performance and Value

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Protek
Test and Measurement

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Selection Guide

Analog Oscilloscopes				
Model	Bandwidth	Max Sweep rate	Max. Sensitivity	Component test
6020R	20MHz	200nS/Div	5mV/Div	No
6025C	25MHz	200nS/Div	5mV/Div	Yes

Handheld Digital Oscilloscopes								
Model	Bandwidth	No. Channels	Sampling rate	Equivalent sampling	Record length	Built in DMM	Interface	Comment
S2401U	1MHz	2	50Ms/S	No	512 Bytes	Yes	USB	
S2405U	5MHz	2	50Ms/S	No	512 Bytes	Yes	USB	
S2505	5MHz	2	50Ms/S	No	512 Bytes	Yes	USB	Built-in 17K Data logger
820	20MHz	2	200Ms/S	No	125KB	Yes	USB	
820F	20MHz	2	200Ms/S	No	125KB	Yes	USB	USB Host
840	40MHz	2	200Ms/S	2.5Gs/S	125KB	Yes	USB	
840F	40MHz	2	200Ms/S	2.5Gs/S	125KB	Yes	USB	USB Host
860	60MHz	2	200Ms/S	5Gs/S	125KB	Yes	USB	
860F	60MHz	2	200Ms/S	5Gs/S	125KB	Yes	USB	USB Host

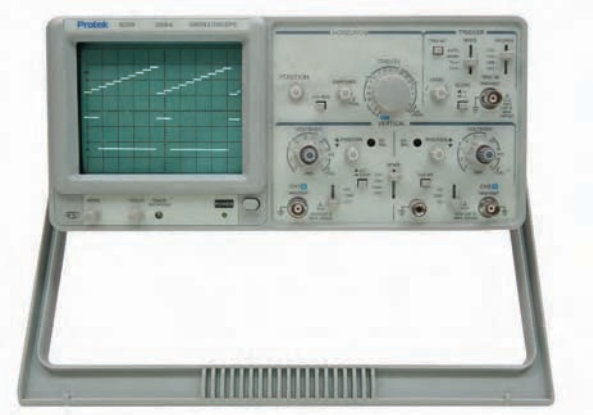
Multimeters								
	Bench Top			Hand Held				Clamp-on
Model	**B4100**	**B4004**	**B940**	**6800**	**6500**	**6300**	**6100**	**604C**
No. Counts	200000	22000	4000	80000	50000	4000	4000	4000
No. Digits	5 ½	4 1/2	3 3/4	4 7/8	4 4/5	3 3/4	3 3/4	3 3/4
Dual Display				√				
Analog Bar graph	√	√	√	√	√			√
Trend Plot display	√							
Back light	√	√	√	√	√	√	√	√
DCV accuracy	±0.05%	±0.05%	±0.3%	±0.05%	± 0.03%	±0.7%	±0.07%	0.8%
Max. Amps	10A	10A	10A	10A	10A	10A	10A	1000A
True RMS	√	√	√	√	√			√
AC + DC Meas.				√	√			
dB				√	√			
Capacitance		√	√	√	√	√	√	
Frequency	√	√	√	√	√	√	√	√
Pulse width				√				
Duty Cycle		√		√	√	√	√	
Temperature		√	√	√		√		
Cont. Buzzer	√	√	√	√	√	√	√	√
Pulse Gen.				√				
Min/Max/Avg	√	√	√	√	√			Min / Max
Peak Min/Max		√		√				
Rel.mode	√	√	√	√	√	√	√	√
Intelligent input jacks						√	√	
Interface	GPIB/ RS232	RS232 to USB	RS232	RS232	RS232			
Memory Sto. / Rcl.	√							
Luminance/ Humidity/Sound						√		
Approvals	CE	CATIII 600V, CATII 1000V	CATII 600V, CE	CATIII 600V, CATII 1000V, CE	CATIII 1000V, CE	CATIII 600V, CATII 1000V	CATIII 600V, CATII 1000V	CATIII 600V

Power Supplies				
Single Output				
Model	Volts output	Amps	Display	Comment
3003B	0 to ± 30V	0 to 3A	LED	
3005B	0 to ± 30V	0 to 5A	LED	
3006B	0 to ± 60V	0 to 1.5A	LED	
1805	0 to ± 18V	0 to 5A	LED	
3003L	0 to ± 30V	0 to 3A	LED	includes a fixed 5V@ 1A output
3005L	0 to ± 30V	0 to 5A	LED	includes a fixed 5V@ 1A output
6003L	0 to ± 60V	0 to 3A	LED	includes a fixed 5V@ 1A output
305L	0 to ± 30V	0 to 5A	Analog	
310L	0 to ± 30V	0 to 10A	Analog	
1230S	0 to ± 12V	0 to 30A	LED	Switching type
1820S	0 to ± 20V	0 to 20A	LED	Switching type
3610S	0 to ± 36V	0 to 10A	LED	Switching type
6006S	0 to ± 60V	0 to 6A	LED	Switching type
P6000	0 to ± 30V	0 to 3A	LCD	Programmable
Dual Output				
3015B	(2x) 0 to ± 30V	0 to 1.5A	LED	
3032B	(2x) 0 to ± 30V	0 to 3A	LED	
3203L	(2x) 0 to ± 30V	0 to 3A	LED	
3205L	(2x) 0 to ± 30V	0 to 5A	LED	
Triple Output				
3040T	(2x) 0 to ± 36V Plus 5.0/3.3V @ 5A fixed	0 to 2.5A	LED	
3033B	(2x) 0 to ± 30V Plus 5.0V @ 3A fixed	0 to 1.5A	LED	
3303L	(2x) 0 to ± 30V Plus 5.0V @ 3A fixed	0 to 3A	LED	
3305L	(2x) 0 to ± 30V Plus 5.0V @ 3A fixed	0 to 5A	LED	

Function Generators								
Model	**B8040FD**	**B8020FD**	**B8010FD**	**B8003FD**	**B8110**	**B8400**	**B8012**	**B8011**
No. of outputs	2	2	2	2	1	1	1	1
DDS	√	√	√	√				
Int/Ext Freq. counter	√	√	√	√			√	√
Frequency Range	1μHz - 40MHz	1μHz -20MHz	1μHz -10MHz	1μHz -3MHz	0.01Hz -10 MHz	0.004Hz -4MHz	1Hz - 2MHz	0.02Hz -2MHz
Sine wave/ Square wave	√	√	√	√	√	√	√	√
Triangle/Ramp	√	√	√	√	√	√	√	√
Pulse	√	√	√	√	√	√	√	√
Exp Up/Down	√	√	√	√				
Sine (x)/X	√	√	√	√				
Burst	√	√	√	√	√			
ASK/PSK/FSK	√	√	√	√				
Int/Ext AM	√	√	√	√	Ext			
FM	√	√	√	√	Ext	Ext		
Lin/Log Sweep	√	√	√	√	√	√		Lin
Sweep Start/Stop	√	√	√	√	√	√		

6020R 20MHz Dual Trace Analog Oscilloscope

- 20MHz Vertical Bandwidth (-3dB)
- Alternate Trigger for a stable display of unrelated signals
- Internal Sync separator circuit for stable triggering of video signals
- X10 Horizontal Magnification
- Light weight and low power consumption
- High brightness CRT with internal graticule
- X-Y operation
- 5mV Vertical sensitivity



6020R

SPECIFICATIONS

Vertical Amplifier
Ch1 and Ch2
Sensitivity: 5mV/Div to 5V/Div in 10 steps (1-2-5 sequence)
Accuracy: ±3%
Bandwidth: (-3dB) DC: 0 to 20MHz
AC: 10Hz to 20MHz
Rise Time: <17.5nS
Input Impedance:
Resistance: 1M ± 5%
Capacitance: 25pF ± 5pF
Input Coupling: AC, DC GND
Display Modes: Ch1, Ch2, ALT, Chop, ADD, X-Y
Invert Channel: Ch2
Maximum Input Volts: 400V DC (DC or AC p-p)

Horizontal Sweep
Sweep Times: 200nS/Div to 0.5Sec/ Div in 20 steps (1-2-5 seq); (x10 Mag: 20nS/Div to 50mS/Div)
Accuracy: ±3% (±5% X10 MAG)
Sweep Modes: Normal, X-Y

Triggering:
Trigger Source: Ch1, Ch2, ALT, LINE and EXT
Trigger Modes: Auto, Norm, TV- V, TV-H
Trigger Slope: Positive or Negative adjustable levels
Trigger Coupling: AC
Trigger Sensitivity: INT: 20Hz to 2MHz: 0.5Div
2MHz to 20MHz: 1.5 Div
TV: INT: 1 Div.; EXT: 1V
ALT: 20Hz to 2MHz: 2.0Div
2MHz to 20MHz: 3.0Div
EXT: 20Hz to 2MHz: 200mV
2MHz to 20MHz: 800mV

Ext.Trigger Input:
Impedance: 1M ± 5% + 25pF Capacitance
Max. Input Volts: 400V (DC + AC peak)

X-Y mode
Inputs: X-axis: Ch1, Y-axis Ch2
Sensitivity: Same as Ch1 & Ch2
Accuracy: ±4%
Frequency Response (-3dB): DC to ≥ 500KHz
Phase Difference: < 3º from DC to 50KHz

Calibrator Signal
Waveform: Square wave
Amplitude: 2.0V ± 2% p-p
Frequency: 1KHz ± 2%

CRT
Size: 8cm x 10cm
Acceleration Volts: 2KV

General Specifications
Power Requirements: AC input Volts: 120V or 220V
Frequency: 50/60Hz
Power Consumption: 35W
Operating Temperature: 0ºC to 40ºC (32ºF to 104ºF)
Dimensions: 12.5”(W) x 5.9”(H) x 18.0”(D)
Weight: 17 lbs
Accessories: Operating manual, AC Line cord, (2) x1/x10 probes

25MHz Dual Trace Analog Oscilloscope with Component Checker

6025C

6025C

- Tests Resistors, Inductors and Capacitors
- Alternate trigger for a stable display of unrelated signals
- 25MHz Vertical Bandwidth (-3dB)
- X10 Horizontal Magnification
- Internal Sync separator circuit for stable triggering of video signals
- Light weight and low power consumption
- High brightness CRT with internal graticule
- X-Y operation

SPECIFICATIONS

Vertical Amplifier
Ch1 and Ch2
Sensitivity: 5mV/Div to 5V/Div in 10 steps (1-2-5 sequence)
Accuracy: ±3%
Bandwidth: (-3dB) DC: 0 to 2MHz
AC: 10Hz to 25MHz
Rise Time: <14.0nS
Input Impedance:
Resistance: 1M ± 5%
Capacitance: 25pF ± 5pF
Input Coupling: AC, DC GND
Display Modes: Ch1, Ch2, ALT, Chop, ADD, X-Y
Invert Channel: Ch2
Maximum Input Volts: 400V DC (DC or AC p-p)

Horizontal Sweep
Sweep Times: 200nS/Div to 0.5Sec/ Div in 20 steps (1-2-5 seq); (x10 Mag: 20nS/Div to 50mS/Div)
Accuracy: ±3% (±5% X10 MAG)
Sweep Modes: Normal, X-Y

Triggering
Trigger Source: Ch1, Ch2, ALT, LINE and EXT
Trigger Modes: Auto, Norm, TV- V, TV-H
Trigger Slope: Positive or Negative adjustable levels
Trigger Coupling: AC
Trigger Sensitivity:
INT: 20Hz to 2MHz: 0.5Div
2MHz to 25MHz: 1.5 Div
TV: INT: 1 Div.; EXT: 1V
ALT: 20Hz to 2MHz: 2.0Div
2MHz to 25MHz: 3.0Div
EXT: 20Hz to 2MHz: 200mV
2MHz to 25MHz: 800mV

Ext.Trigger Input
Impedance: 1M ± 5% + 25pF Capacitance
Max. Input Volts: 400V (DC + AC peak)

X-Y mode
Inputs: X-axis: Ch1, Y-axis Ch2
Sensitivity: Same as Ch1 & Ch2
Accuracy: ±4%
Frequency Response (-3dB): DC to ≥ 500KHz
Phase Difference: < 3° from DC to 50KHz

Component Checker
Test Voltage: Approx. 4.5V RMS open circuit
Test Current: 6.6mA Max short circuit
Test Frequency: 60Hz

Calibrator Signal
Waveform: Square wave
Amplitude: 2V ± 2% p-p
Frequency: 1KHz ± 2%

CRT
Size: 8cm x 10cm
Acceleration Volts: 2KV

General Specifications
Power Requirements: AC input Volts: 120V or 220V
Frequency: 50/60Hz
Power Consumption: 35W
Operating Temperature: 0ºC to 40ºC (32ºF to 104ºF)
Dimensions: 12.5”(W) x 5.9”(H) x 18.0”(D)
Weight: 17 lbs
Accessories: Operating manual, AC line cord, (2) x1/x10 probes and Test cable

Hand-Held DSO/DMM

- 20Mhz [820], 40MHz [840], 60MHz [860] bandwidths
- Built in High accuracy 6000 count True RMS DMM
- 200MS/s sampling rate single channel and 100MS per channel in dual channel [840, 860], 100MS/s [820]
- 2.5GHz Equivalent sampling [840] and 5GHz Equivalent sampling [860]
- 20 automatic waveform Measurements
- Self test and Self calibration
- Help menu
- Models 840 and 860 include FFT
- 125KB record length for each channel
- 10 waveforms and setups may be stored and recalled
- USB interface and optional flash memory port [840, 860]
- High Resolution 320x 240 pixel Monochrome LCD
- Edge/Pulse width, TV/Pattern and Delay trigger modes

820, 840, 860

SPECIFICATIONS

Vertical
No inputs: 2
Analog bandwidth: [820] 20MHz, [840] 40MHz, [860] 60MHz
Rise Time: [820] <17.5ns, [840] < 8.75ns, [860] < 5.83ns
Sensitivity: 5mV to100V/div (in a 1,2,5 sequence)
Resolution: 8 bit
Offset: ±5 div from the center
Vertical Accuracy: ±3 %
Input Impedance: 1MΩ ±1% and 20pF ±1.3pF
Max input V: 300V DC or AC peak
Probe Attenuation: x1 and x10

Horizontal:
Sweep rates: [820] 50ns/Div to 50s/Div, [840] 10ns/Div to 50s/Div, [860] 5ns/Div to 50s/Div
Time base Accuracy: ±0.01%

Acquisition system:
Acquisition Modes: Sample, Peak detect, Envelope, Average
Sampling: Real Time and Equivalent [840, 860]
Sample Rates: [820] 100MS/s, [840, 860] 200MS/s single channel and 100MS/s per channel Dual channel
Equivalent Sampling: [840] 2.5GS/s, [860] 5GS/s
Sample Rate Accuracy: 100ppm
Record Length: 125KB/Channel
Waveform Interpolation: Dot, Linear, Sine, and Pulse
Peak Detect: 10ns minimum
Averages: 2 to 256

Trigger
Sensitivity: 0.5 Div (DC to 5MHz)
Trigger Types: Edge, Pulse width, Video
Coupling: AC, DC HF-Reject, LF-Reject, Noise Reject
Modes: Normal, Single, Roll, Auto
Trigger Level Range: ±20 Div from the center of the screen
Trigger Level accuracy: ±0.4 Div
Trigger sources: CHA and CHB

Video Trigger
Video Trigger sensitivity: 0.7 Div
Video Type: NTSC, PAL, Secam

Measurements:
Types: P-P, Max, Amplitude, Top, Base, Pos/Neg over shoot, Pre-shoot, RMS, Mean, One cycle mean, Freq., Period, ±Width, ±Duty cycle, Rise/Fall time, Delay and Phase shift
Math Operations:
CHA+CHB, CHA-CHB, CHB-CHA, FFT [840, 860]
Cursors: △V, △T
FFT: [840, 860]
Weighting:
Rectangular, Hamming, Hanning and Blackman-Harris
Amplitude display: 1, 2, 5, 10dB/Div
Maximum Frequency: 1.25GHz
Memory: 10 waveforms and settings saved and recalled

DMM

DC Volts:
Range: 600mV to 1000V
Accuracy: ±(0.3% + 10d)
Best Resolution: 100µV
Impedance: 10MΩ
Overload protection: 1000VDC or AC peak

AC Volts:
Range: 6V to 600V
Accuracy: ±(0.75% + 10d) 50Hz to 1KHz;
±(2.0% + 10d) 1KHz to 30KHz
Best Resolution: 1mV
Impedance: 10MΩ
Overload protection: 1000VDC or AC peak

Resistance
Range: 600Ω to 60MΩ
Accuracy: ±(0.5% + 10d)
Best Resolution: 100mΩ
Overload Protection: 250V DC or AC peak

Capacitance
Range: 60nF to 300µF; Accuracy: ±(2.0% + 10d)

Other measurements
Diode test accuracy: ±2%
Continuity: Buzzer will sound < 60Ω
dBm with reference impedances of
2,4,8,16,50,75,93,110,125,135,150,300,600,900, 1K or 1.2KΩ
High current: to 600A with external current Clamp
Temperature (with Probe): to 600ºC (1112ºF)

General Specifications
Size: 8.3" (H) x 4.2" (W) x 2.2" (D); Weight: 2.6 lbs
Power: 9VDC @ 1A AC/DC adapter, 7.2V NIMH rechargeable battery pack
Standard accessories: AC/DC adapter, User's manual, Scope probe (2), Holster, Test Leads, USB cable and software
Optional accessories: Battery pack, Temperature adapter, Clamp-on current probe, Carrying Bag and USB flash memory

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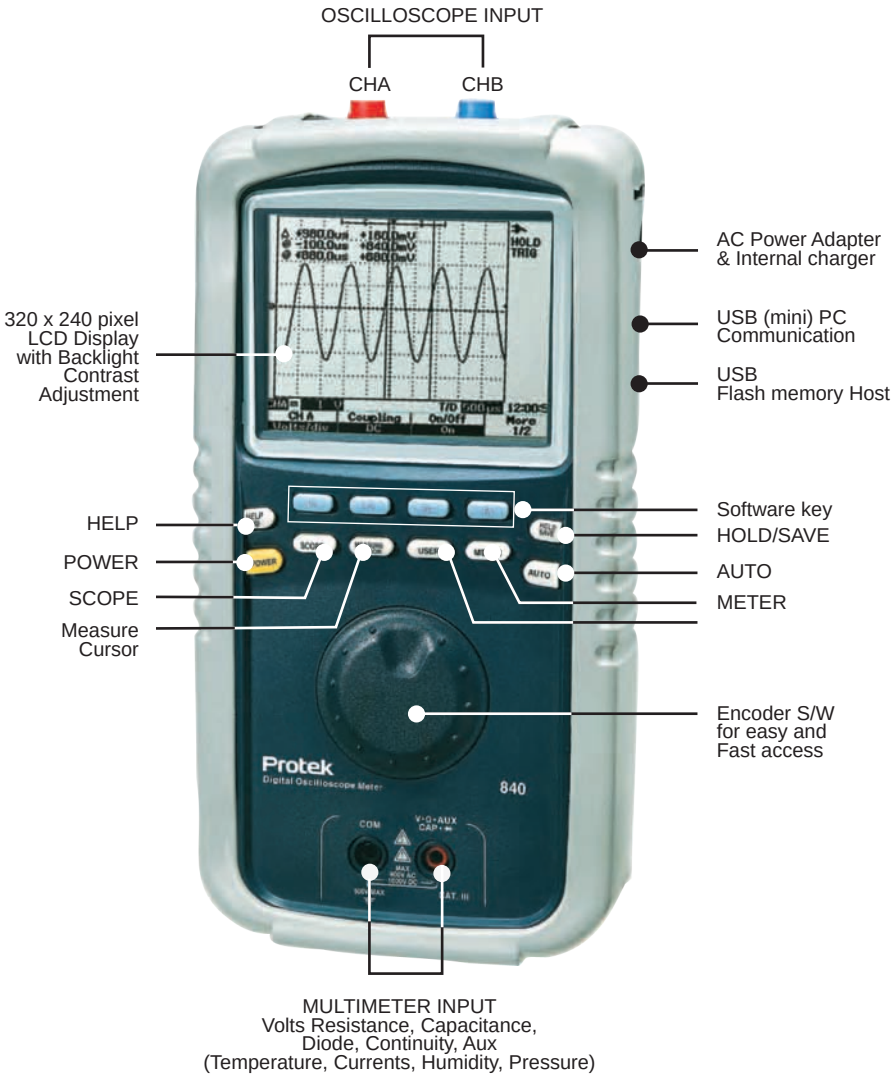
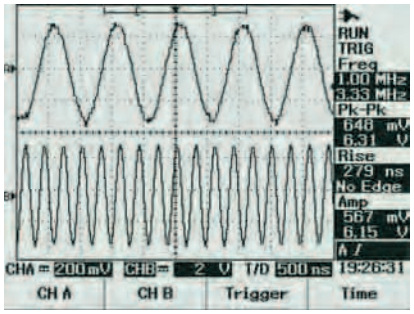


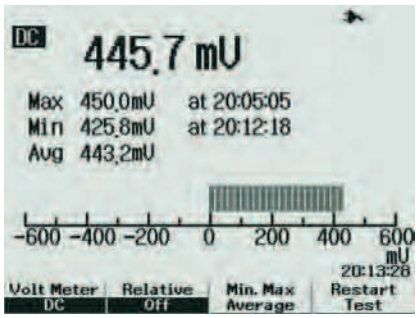
Main Display waveforms and indicators

Oscilloscope



CH1 and CH2 waveforms, along with the Dual channel Math waveform, trigger levels, horizontal positions, offsets, V/div and Time/division settings are displayed.

Meter

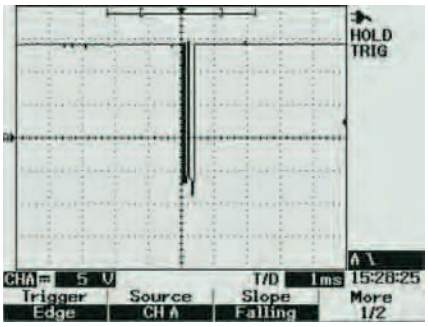


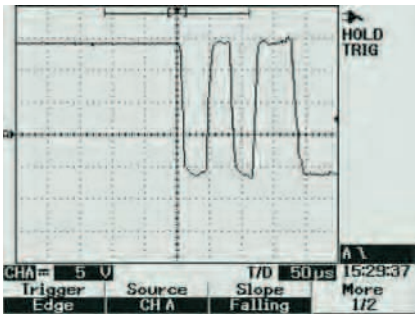
Analog Bargraph, MIN, MAX, AVG VOLT, DC, etc.

FEATURES

Record Length

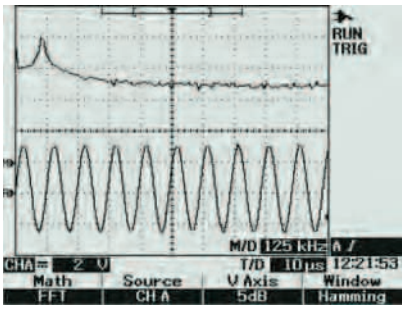
A long record length and high-speed sampling rates allows the user to capture and view a more detailed "picture" of a complex Waveform and it components. Up to 125kB samples of waveform information may be captured and accurately displayed on the LCD screen as show in the illustration below.





Math

Dual channel Math functions are available for adding and subtracting waveforms applied to the CHA and CHB inputs. The FFT allows you to view a waveform spectrum using a Rectangular, Hamming, Hanning or Black Man-Harris window.

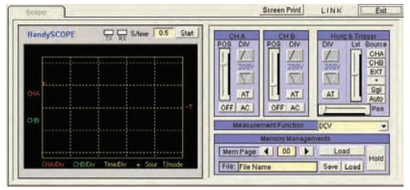


S2401U S2405U 50Ms/S, 1MHz Handheld DSO/DMM 50Ms/S, 5MHz Handheld DSO/DMM

S2401U S2405U

- Dual Channel
- 50Ms/S sampling rate
- 50mV/Div Vertical sensitivity
- Auto ranging Vertical and Horizontal scales
- Built-in auto/manual ranging, True RMS, 5000 count DMM
- Designed to UL3111, CSA C22.2 No 1010 standards
- Handheld and battery operated
- USB port and supplied software
- User-friendly front panel
- Li-ion Battery pack for long term usage between charging

S2401U
S2405U
S2505



Software Display

S2505 50Ms/S, 5MHz Handheld DSO/DMM with Data Logger

S2505

- Dual channel, DC to 5MHz bandwidth Oscilloscope
- Data logging to 17,000 points
- 50 Ms/S sampling rate Single channel and 25 Ms/S Dual channel
- Built in Auto ranging 10,000 count True RMS DMM with Min/Max/AVG, Go-No go and Trend plot
- Auto ranging Vertical and Horizontal scales
- 10MHz Frequency counter
- Li-ion Battery pack for long periods of use between charges
- User friendly front panel
- USB interface with software and cable

SPECIFICATIONS

S2401U S2405U

Oscilloscope Section

- Vertical
  Bandwidth: 5MHz S2405U / 1MHz S2401U
  Resolution: 8 bits
  Number of Channels: 2
  Coupling: AC and DC
  Input Impedance: 1MΩ
  Accuracy: ±3%
  Max. Input Volts: 600V DC or RMS
  Vertical Sensitivity: 50mV to 500V/Div S2405U and 500mV to 500V/Div S2401U in a 1-2-5 sequence

- Horizontal
  Real Time Sampling Rate: 50Ms/S Single channel
  25Ms/S Dual channel
  Record Length: 512 bytes single shot and glitch capture
  256 bytes all other modes
  Samples/Div: 25 samples
  Update Rate: Real time
  Modes: Single shot, Roll mode, Normal
  Accuracy: ±0.01%
  Sweep Rate: 1µS to 5 Second in a 1-2-5 sequence

- Memory: 16 waveforms and 16 setups may be saved in memory

- Triggering
  Trigger Source: Ch A, Ch B and External
  Coupling: AC, DC
  Trigger Sensitivity: 2/20 Division
  Trigger Modes: Auto and Normal
  Slope: Positive and Negative

Digital Multimeter Section

- DC Volts
  Ranges: 5V, 50V, 500V, 1000V
  Best Resolution: 1mV
  Accuracy: ±(0.3% + 3d)
  Input Impedance: 1MΩ

- AC Volts
  Ranges: 3V, 30V, 300V, 750V
  Best Resolution: 1mV
  Accuracy: ±(0.75% + 5d) 40Hz to 450Hz,
  ±(2% + 5d) 450Hz to 5KHz
  ±(2.5% + 5d) 5KHz to 20KHz
  Input Impedance: 1MΩ

- **Ohms**
  Ranges: 5KΩ 50KΩ, 500KΩ, 5MΩ
  Best Resolution: 1Ω
  Accuracy: ±(0.5% + 5d)
  Overload Voltage: 600V DC or AC peak

- **Continuity**
  Test Voltage: 1.7V
  Threshold: 100 digit

- **Frequency**
  Ranges: 100Hz, 1kHz, 10kHz, 100kHz,1MHz, 10MHz
  Best Resolution: 0.01Hz
  Accuracy: ±(0.05% + 5d)
  Overload Voltage: 600V DC or AC peak

- **RPM**
  Ranges: 240 to 60,000RPM
  Resolution: 1RPM
  Accuracy: ±(0.05% + 5d)

- **Pulse Width**
  Range: 2µS to 500mS (pulse width > 2µS)

- **%Duty Cycle:** 25% to 75%

- **General Specifications**
  Power: 3.7V Li-ion Battery pack
  120V to 5V @ 1Amp DC adapter
  Display: 132 x 128 pixel super twist LCD
  Size: 7.5”(H) x 3.5”(W) 1.57”(D)
  Weight: 1.5 lbs
  Standard Accessories: Operating manual, Carrying case, Test leads, Holster, USB cable and Software, AC/DC charger and 3.7V Li-ion Battery pack

S2505

Oscilloscope Section

- **Vertical**
  Bandwidth: 5MHz
  Resolution: 8 bits
  Number of Channels: 2
  Coupling: AC and DC
  Input Impedance: 1MΩ
  Accuracy: ±3%
  Max. Input Volts: 600V DC or AC RMS
  Vertical Sensitivity: 50mV to 500V/Div in a 1-2-5 sequence

- **Horizontal**
  Sample Rate: 50Ms/S Single channel
  25Ms/S Dual channel
  Record Length: 512 bytes single shot and glitch capture
  256 bytes all other modes
  Samples/Div: 25 samples
  Update Rate: Real time
  Modes: Single shot, Roll mode, Normal
  Accuracy: ±0.01%
  Sweep Rate: 1.0µS to 5 Seconds in a 1-2-5 sequence
  Memory: 16 waveforms and 16 setups may be saved in memory

- **Triggering**
  Trigger Source: Ch A, Ch B and External
  Coupling: AC, DC
  Trigger sensitivity: 2 to 20 Divisions
  Slope: Positive or Negative

Digital Multimeter Section

- **Data Logger**
  Data Logger Memory: 17,000 points
  Sample Rate: 0.25s/S
  Sampling Modes: Peak, Time
  Time: Real Time Clock

- **DC Volts**
  Ranges: 1000mV, 10V, 100V, 1000V
  Best Resolution: 0.1mV
  Accuracy: ±(0.3% + 3d)
  Input Impedance: 1MΩ

- **AC Volts (True RMS)**
  Ranges: 500mV, 5V, 50V, 500V, 750V
  Best Resolution: 0.1mV
  Accuracy: ±(0.75% + 5d) 40Hz to 450Hz,
  ±(2% + 5d) 450Hz to 5KHz
  ±(2.5% + 5d) 5KHz to 20KHz
  Input Impedance: 1MΩ

- **Ohms**
  Ranges: 5KΩ, 50KΩ, 500KΩ, 5MΩ
  Best Resolution: 100mΩ
  Accuracy: ±(0.5% + 5d)
  Overload Voltage: 600V DC or AC RMS

- **Continuity:**
  Test Voltage: 1.7V
  Buzzer will sound at < 100Ω, resistance
  Overload Voltage: 600V DC or AC RMS

- **Frequency**
  Ranges: 100Hz, 1KHz, 10KHz, 100KHz,1MHz, 10MHz
  Best Resolution: 0.01Hz
  Accuracy: ±(0.05% + 5d)

- **RPM**
  Ranges: 240 to 9,999RPM
  Resolution: 1RPM
  Accuracy: ±(0.05% + 5d)

- **Pulse Width**
  Range: 2µS to 500mS (pulse width > 2µS)

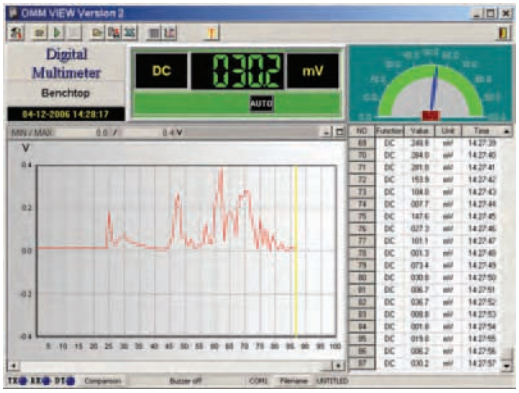
- **%Duty cycle:** 25% to 75%

- **General Specifications**
  Power: 3.7V 1400mAH Li-ion Battery pack
  Dimensions: 3.5”(W) x 7.5”(H) x 1.25”(D)
  Weight: 1.5 lbs
  LCD: 132 x 128 pixel super twist LCD
  Standard Accessories:
  Test leads, Operating manual, Holster, USB cable and Software, AC/DC Charger and a 3.7V 1400mAH Li-ion Battery pack (installed)

Bench Top Digital Multimeter
3-3/4 Digit DMM with RS-232

- True RMS AC volts and amps measurements
- Capacitance and Frequency measurements
- Back-lit display and Auto/Manual ranging
- MIN/MAX and Relative mode
- Delay hold mode
- AC Line or Battery Operated
- RS-232 Interface with software
- Portable or Bench with Pop-up Stand
- Storage Compartment

B940



Software Display

SPECIFICATIONS

DC Voltage
Range: 400mV, 4V, 40V, 400V and 1000V
Best Resolution: 0.1mV
Accuracy: ±(0.3% + 2d)

AC Voltage
Range: 4V, 40V, 400V and 750V
Best Resolution: 1.0mV
Accuracy: ±(0.8% + 5d)

DC Current
Range: 4mA, 40mA, 400mA and 10A
Best Resolution: 1µA
Accuracy: ±(0.8% + 5d)

AC Current
Range: 4mA, 40mA, 400mA and 10A
Best Resolution: 1µA
Accuracy: ±(1.5% + 5d)

Resistance
Range: 400Ω , 4K Ω , 40KΩ, 400KΩ, 4MΩ, 40MΩ
Best Resolution: 0.1Ω
Accuracy: ±(0.5% + 5d)

Frequency
Range: 100Hz, 1KHz, 10KHz and 600KHz
Best Resolution: 0.01Hz
Accuracy: ±(0.1% + 2d)

Capacitance
Range: 4nF, 40nF, 400nF, 4µF, 40µF
Best Resolution: 0.1pF
Accuracy: ±(2% + 4d)

Diode test
Test Volt: 3 V
Test Current: 0.6mA

Continuity
Buzzer: will sound at < 40Ω Resistance

General Specifications
Size: 3.3" (H) x 9.0" (W) x 9.4" (D)
Weight: 3.3 lbs
Power: 9V NEDA battery (not supplied) or 90 to 132VAC / 198 to 264VAC @ 50/60Hz (Adapter Supplied)
Accessories: Manual, Test leads, Carrying strap, Line cord, RS-232 cable, Software CD

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

4 - 1/2 Digit Bench Top Digital Multimeter True RMS with RS232

B4004

B4004

- AC line or Battery operated
- 0.05% DC V Accuracy
- Measures Frequency to 220MHz
- MIN/MAX, Peak MIN/MAX and Relative modes
- Capacitance, and Temperature measurements
- Back lit display, Auto power off and Auto/Manual ranging
- True RMS AC Volts and Amps measurements
- Optically isolated RS232 interface
- PC Link software and RS232 to USB cable included
- CATII 1000V & CATIII 600V
- Can be used with clamp current tranducers Protek 601C or 602C for high current measurements

SPECIFICATIONS

DC Voltage
Ranges: 200mV, 2V, 20V, 200V and 1000V
Best Resolution: 10µV
Accuracy: ±(0.05% + 6d)
Input Impedance: 10MΩ
Overload Volts: 1000V DC or 750V AC RMS

AC Voltage
Ranges: 200mV, 2V, 20V, 200V and 750V
Best Resolution: 10µV
Accuracy: ±(0.5% + 30d) 40Hz to 60Hz
±(1.0% + 30d) 60Hz to 5KHz
±(2.0% + 30d) 5KHz to 10KHz
Input Impedance: 10MΩ
Overload Volts: 1000V DC or 750V AC RMS

DC Current
Ranges: 200µA, 2000µA, 20µA, 200mA, 10A
Best Resolution: 10nA
Accuracy: ±(0.15% + 15d)
Overload Protection: 0.3A /250V and 10A/250V fuse

AC Current
Ranges: 200µA, 2000µA, 20mA, 200mA, 10A
Best Resolution: 10nA
Accuracy: ±(1.0% + 30d) 60hz to 1KHz:
±(1.2% + 30d) 1KHz to 5KHz:
Overload protection: 0.3A /250V and 10A/250V fuse

Resistance
Ranges: 200Ω, 2KΩ, 20KΩ, 200KΩ, 2MΩ, 20MΩ and 200MΩ
Best Resolution: 10mΩ
Accuracy: ±(0.1% + 10d) 200Ω to 2MΩ ranges
±(0.5% + 10d) 20MΩ range
±(2.0% + 10d) 200MΩ range

Logic Frequency
Ranges: 20Hz to 220MHz
Best Resolution: 1mHz
Accuracy: ±(0.06% + 10d)
Overload Protection: 250V

Linear Frequency

Input Range	Sensitivity(True RMS) 5Hz to 10KHz	10KHz to 100KHz
200mV	5mV	10mV
2V	50mV	100mV
20V	500mV	10V
200V	5V	10V

Temperature
Ranges: -30° C to 1300 °C (-22°F to 2372°F)
Accuracy: ±(1% + 2d)

Duty Cycle
Ranges: 5% to 95%
Accuracy: ±10%

Capacitance
Ranges: 20nF, 200nF, 2µF, 20µF, 200µF, 2000µF, 20mF, 200mF
Best Resolution: 10 pF
Accuracy: ±(1.2% + 30d) 20nF to 20µF ranges
±(2.2% + 30d) 200µF to 20mF ranges
200mF unspecified
Overload Protection: 250V

Diode test
Test Volt: 3V
Test Current: 0.6mA
Overload Protection: 250V

Continuity
Buzzer will sound @ <30Ω Resistance
Overload Protection: 250V

Safety: IEC61010-1 CATII 1000V and CATIII 600V

General Specifications
Size: 9"(L) x 9.4"(W) x 3.3"(D)
Weight: 3.3 lbs
Power: 9V NEDA battery or 120V AC @ 60Hz
Accessories: Test leads, Operating manual, RS-232 cable to USB cable and PC Link software
Temp adapter & thermocouple

Bench Top Digital Multimeter
5-1/2 Digit Programmable

- 5-1/2 Digit multimeter with selectable count resolutions up to 200,000
- True RMS and measures frequency
- Selectable Count Resolutions: 2K, 20K, 200K
- Auto-ranging
- Trend plot display
- RS-232 interface standard and optional GPIB interface
- Min/Max/Avg, Relative error and comparison functions
- May be used on line voltages from 85V to 250V without any internal changes
- Software included
- Seven setups may be stored and recalled in memory

B4100

SPECIFICATIONS

[B4100]

Display
Slow: Counts: 200,000; Digits: 5 ½
Medium: Counts: 20,000; Digits: 4 ½
Fast: Counts: 2,000; Digits: 3 ½

Specifications (at 25°C ±5°C, 77°F ±9°F)

DC Voltage
Ranges: 2V, 20V, 200V, 1000V
Best Resolutions:
10µV (Slow), 100µV (Med), 1mV (Fast)
Accuracy: ±(0.05% + 3d)
Input Impedance: 10MΩ
Overload Protection: 1000V

AC Volts
Ranges: 2V, 20V, 200V, 1000V
Best Resolutions: 100µV (Slow and Med), 1mV (Fast)
Accuracy: ±(0.5% + 5d) 45Hz to 450Hz
Overload Protection: 1000V
Crest Factor: 3:1

DC Current
Ranges: 200µA, 200mA, 10A
Best Resolutions:
200µA: 1nA (Slow), 10nA (Med),100nA (Fast)
200mA: 1µA (Slow), 10µ (Med), 100µA (Fast)
10A: 100µA (Slow), 1mA (Med), 10mA (Fast)
Accuracy: ±(0.1% + 5d), Max burden: 200mV
Overload Protection: 0.5A/250V and 10/250V fuse

AC Current
Best Resolutions:
200µA: 10nA (Slow and Med), 100nA (Fast)
200mA: 1µA (Slow), 10µA (Med), 100µA (Fast)
10A: 100µA (Slow), 1mA (Med), 10mA (Fast)
Accuracy: ±(0.5% + 5d), Max burden: 200mV
Overload Protection: 0.5A/250V and10A/250V fuse

Resistance
Ranges: 200Ω, 2KΩ, 200KΩ, 2MΩ, 10MΩ
Best Resolutions:
1mΩ (Slow), 10mΩ (Med), 100mΩ (Fast)
Accuracy: ±(0.05% + 5d)
Overload Protection: 250V or AC RMS

Frequency
Ranges: 200Hz, 2KHz, 20KHz, 200KHz
Best Resolutions:
1mHz(Slow), 10mHz (Med), 100mHz (Fast)
Accuracy: ±(0.05% + 2d)
Overload Protection: 250V DC or AC RMS

Diode
Range: 2V
Test Current: Approximately 1.0mA
Test Volts: Approximately 3V
Continuity: Buzzer will sound at 100Ω or less

Interface
Type: RS-232
Connector: 9 Pin din
Baud Rate: 1200, 2400, 4800 or 9600 bps
GPIB: optional

General Specifications
Display: 128 x 64 pixel super twist LCD
Size: 3.3" (H) x 9.5" (W) x 10.5" (D)
Weight: 3.2 lbs
Operating Temperature: 0 to 50°C (32 to 120°F)
Power: 85V to 275V ±10%
Supplied Accessories: Manual, Line cord, Software disk, RS-232 cable, Test Leads
Optional Acessories: GPIB interface

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

Model 6100 - 3 ¾ Auto ranging , Economy priced, DMM

With Diode, Capacitance, Duty Cycle, Continuity and Frequency functions.

Features

- 3 ¾ digit and 4000 count
- Back lit display
- Appropriate Input jacks light up when measurement function is selected
- CATII 1000V and CAT III 600V input and test leads
- Measures Capacitance, Frequency and duty cycle
- Buzzer and flashing light warning when leads are connected to wrong input or over load
- Relative measurement and data hold
- Resetable current overload fuses, no need to open the meter to replace the blown fuse
- Auto and manual Ranging

Specifications

DC Volts:
Ranges: 400mV, 4V, 40V, 400V, 1000V
Best Resolution: 100µV
Accuracy: ± (0.7% +2d);
± (0.8% +2d) 1000V range

Input Impedance: 10MΩ
Maximum Input volts: 1000V DC

AC Volts:
Ranges: 400mV, 4V,40V, 400V, 1000V
Best Resolution: 100µV
Accuracy: ± (0.8% +3d); all other range
± (3.0% +3d) 400mv range
± (1.0% +3d) 1000V range
Input Impedance: 10MΩ
Maximum Input volts: 750V AC

DC Current:
Ranges: 400µA, 4000µA, 40mA, 400ma, 10A
Best Resolution: 100pA
Accuracy: ± (1.2% +3d)
± (2.0% +3d) 10A range
Overload Protection: 500mA /250V resettable fuse and 10A/ 250V fuse

AC Current:
Ranges: 400µA, 4000µA, 40mA, 400ma, 10A
Best Resolution: 100pA
Accuracy: ± (1.5% +5d)
± (3.0% +7d) 10A range
Overload Protection: 500mA /250V resettable fuse and 10A/ 250V fuse

Resistance:
Ranges: 400.0Ω, 4.000KΩ, 40.00KΩ, 400.0KΩ, 4.000MΩ, 40.00MΩ
Best resolution: 0.1Ω
Accuracy: ± (1.2% +2d)
± (2.0% +5d) 40MΩ range
Open circuit voltage: approx. 250mV
Overload Protection: 250VDC or RMS

Capacitance:
Ranges: 4nF, 40nF, 400nF, 4µF, 40µF, 200µF
Best Resolution: 1pF
Accuracy: ± (3.0% +5d)
± (5.0% +5d) 4nF range
Overload protection: 400mA/250V resettable fuse

Frequency:
Ranges: 9.999Hz, 99,.99Hz, 999.9Hz, 9.999Khz, 99.99KHz, 199,9KHz
Best Resolution: 0.001Hz.
Accuracy: ± (3.0% +5d)
Unspecified greater than 200 KHz
Overload Protection: 250V DC or RMS
Sensitivity: 0.6V to 3V rms.

Duty Cycle:
Range: 0.1% to 99.9%
Resolution: 0.1%
Accuracy: ± 3.0%

Continuity Buzzer
Open circuit V: 0.5V
Buzzer will sound at < 50Ω resistance

Diode:
Open Circuit Voltage: 1.5V DC
Test Current: 1mA
Overload Protection: 250V DC or RMS

Transistor test:
HFE range: 0 to 1000
Base Current: 10µA
Open circuit Vce: 2.8V

General Specifications:
Operating Temperature:
0 to 40˚C (32˚F to 122˚F) with < 70% humidity

Dimensions: 7.7" (H) x 3.6"(W) x 2.2" (D)
195 x 92 x 55 mm
Weight: 14.3 oz

Power: 3x 1.5V AAA Batteries
Accessories: Test Leads, Operator's manual and batteries

Protek
Test and Measurement
45 Smith Street, Englewood, NJ 07631
Phone: (201)227-1161 Fax: (201)227-1169
sales@protektest.com www.protektest.com

Model 6300- Multifunction (Five in one) DMM

3 ¾ Auto ranging DMM with Sound Level, Relative Humidity, Luminance, and Temperature measurements .The DMM that senses its environment.

Features

- Five meters in one. Humidity, Light, Sound, Temperature plus DMM.
- Display reads Humidity and Ambient temperature along with measurement Value.
- Resettable current overload fuses, no need to open the meter to replace a blown fuse.
- Temperature measurement In Fahrenheit or Celsius
- Measures Duty cycle, Frequency and Capacitance
- 3 ¾ digit and 4000 count
- Relative mode and Data hold
- Auto and Manual Ranging
- Auto power-off (Sleep mode)
- Buzzer and flashing light warning when leads are connected to wrong input or overload condition
- Back lit display

Specifications

DC Volts:
Ranges: 400mV, 4V, 40V, 400V, 1000V
Best Resolution: 100µV
Accuracy: ± (0.7% +2d)
Input Impedance: 10MΩ
Maximum Input volts: 250V 400mV range
1000V DC all other ranges

AC Volts:
Ranges: 400mV, 4V,40V, 400V, 1000V
Best Resolution: 100µV
Accuracy: ± (0.8% +3d)
± (3.0% +3d) 400mv range
± (1.0% +3d) 1000V Range
Input Impedance: 10MΩ
Maximum Input volts: 250V 400mV range
1000V DC all other ranges

DC Current:
Ranges: 400µA, 4000µA, 40mA, 400ma, 10A
Best Resolution: 100pA
Accuracy: ± (1.2% +3d)
± (2.0% +3d) 4A and 10A ranges
Overload Protection: 500mA /250V resettable fuse and 10A/ 250V fuse

AC Current:
Ranges: 400µA, 4000µA, 40mA, 400ma, 10A
Best Resolution: 100pA
Accuracy: ± (1.5% +5d)
± (3.0% +7d) 4A and 10A ranges
Overload Protection: 500mA /250V resettable fuse and 10A/ 250V fuse

Resistance:
Ranges: 400.0Ω, 4.000KΩ, 40.00KΩ, 400.0KΩ, 4.000MΩ, 40.00MΩ
Best resolution: 0.1Ω
Accuracy: ± (1.2% +2d)
± (2.0% +5d) 40MΩ range
Open circuit voltage: approx. 250mV
Overload Protection: 250VDC or RMS

Capacitance:
Ranges: 4nF, 40nF, 400nF, 4µF, 40µF, 200µF
Best Resolution: 1pF
Accuracy: ± (3.0% +3d)
Overload protection: 250V DC or RMS

Frequency:
Ranges: 9.999Hz, 99,99Hz, 999.99Hz, 9.999Khz, 99.99KHz, 199,9KHz.
Best Resolution: 0.001Hz.
Accuracy: ± (1.5% +5d) ranges
± (2.0% +5d) 10Hz and 200 KHz
Unspecified > 200 KHz
Overload Protection: 250V DC or RMS
Sensitivity: 0.6V to 3V RMS

Duty Cycle:
Range: 0.1% to 99.9%
Resolution: 0.1%
Accuracy: ± 3.0%

Temperature: (Main display)
Range: 0˚C to 40˚C (32˚F to 104˚ F)
Resolution: 0.1˚C or F
Accuracy: ± 2˚C and ± 4˚F

Temperature: (with Thermocouple)
Ranges: -20˚C to 1000˚C
Resolution: 1˚C or F
Accuracy:

± 5.0% or ±3˚C	-20˚C to 0˚C
± 1.0% or ±2˚C	0˚C to 400˚C
± 2.0%	400˚C to 1000˚C
± 5.0% or ± 6˚F	-4˚F to 32˚F
± 1.0% or ± 4˚F	32˚F to 752˚F
± 2.0%	752˚F to 1832˚F

Continuity Buzzer:
Open circuit V: 0.5V
Buzzer will sound at < 40Ω resistance

Diode:
Open Circuit Voltage: 1.5V DC
Test Current: 1mA
Overload Protection: 250V DC or RMS

Sound level:
Range: 40dB to 100dB
Resolution: 0.1dB
Accuracy:±3.5% at 94dB and a 1KHz sine wave
Frequency range: 100Hz to 8 KHz

Luminance:
Ranges: 0 to 4000 lux and 0 to 40,000 (x10 lux)
Resolution: 1 lux (x1 lux) and 10 lux (x10 lux)
Accuracy: ± (5% +10d) at a color temperature of 2856K calibrated to a standard Incandescent lamp

General Specifications:
Relative Humidity:
Range: 20~95% Accuracy: ± 5%
Operating Temperature:
0 to 40˚C (32˚F to 122˚F) with < 70% humidity
Dimensions: 7.7" (H) x 3.6"(W) x 2.2" (D)
195 x 92 x 55 mm
Weight: 14.3 oz
Power:3x 1.5V AAA Batteries
Accessories: Test Leads, Operator's manual and batteries

Protek
Test and Measurement
45 Smith Street, Englewood, NJ 07631
Phone: (201)227-1161 Fax: (201)227-1169
sales@protektest.com www.protektest.com

- 50,000 count and 50 segment bar graph backlit display
- Basic DC accuracy is ±0.03%
- RS232 interface with software and cable
- dBm measurement with 4Ω to 1200Ω reference resistances
- AC and (AC+DC) TRUE RMS measurement
- Measures frequency, Duty cycle and Capacitance
- Cat III 1000V
- Max/Min and Relative measurements
- Auto power off and backlit display

6500

SPECIFICATIONS

DC mV
Ranges: 50mV, 500mV; Best Resolution: 1µV
Accuracy: ±(0.03% + 6d); Input Impedance: 1GΩ

DC Volts
Ranges: 5V, 50V, 500V, 1000V; Best Resolution: 100µV
Accuracy: ±(0.03% + 6d); Max. Input Voltage: 1000V DC
Input Impedance: 10MΩ

AC mV
Ranges: 50mV, 500mV; Best Resolution: 1µV
AC mV Accuracy:
40Hz to 1Khz: ±(0.5% + 40d), 1KHz to 10KHz: ±(1.0% + 40d), 10KHz to 20KHz: ±(2.5% + 40d)
Input Impedance: 1GΩ

AC Volts
Ranges: 5V, 50V, 500V, 1000V; Best Resolution: 100µV
AC Volts Accuracy (5V to 500V ranges):
40Hz to 1KHz: ±(0.5% +40d), 1KHz to 10KHz: ±(1.0% + 40d), 10KHz to 20KHz: ±(2.5% + 40d)
Max. Input Voltage: 1000V DC or AC peak
Input Impedance: 10MΩ

DC µA:
Ranges: 500µA, 5000µA; Best Resolution: 10.0nA
Accuracy: ±(0.15% + 1d)
Overload Protection: 0.5A/250V fuse

DC mA
Ranges: 50mA, 500mA; Best Resolution: 1.0µA
Accuracy: ±(0.15% + 10d)
Overload Protection: 0.5A/250V fuse

DC A
Ranges: 5A, 10A; Best Resolution: 100µA
Accuracy: ±(0.5% + 10d)
Overload Protection: 10A/250V fuse

AC µA
Ranges: 500µA, 5000µA; Best Resolution: 10.0nA
Accuracy: ±(0.75% + 10d) 40Hz to 1KHz
Overload Protection: 0.5A/250V fuse

AC mA
Ranges: 50mA, 500mA; Best Resolution: 1.0µA
Accuracy: ±(0.75% + 20d) 40Hz to 1KHz
Overload Protection: 0.5A/250V fuse

AC A
Ranges: 5A, 10A; Best Resolution: 100µA
Accuracy:
40Hz to 1KHz 5A: ±(0.75% + 20d)
40Hz to 1KHz 10A: ±(0.75% + 20d)
Overload Protection: 10A/250V fuse

Resistance
Ranges: 500Ω, 5KΩ, 50KΩ, 500KΩ, 5MΩ, 50MΩ
Best Resolution: 10.0mΩ; Accuracy: ±(0.1% + 5d)
Max. Input Voltage: 250V

Continuity Buzzer
Buzzer Will Sound: < 60Ω resistance

Capacitance
Ranges: 50nF, 500nF, 5µF, 50µF, 500µF, 5000µF
Best Resolution: 10pF; Accuracy: ±(1.0% + 5d)
Maximum Input Volts: 250V

Diode Test
Range: 2.5V; Resolution: 0.1mV
Accuracy: ±(1.0% + 5d); Test Current: Approx. 0.7mA

Logic Frequency
Sensitivity: +2V to +5V Square wave
Accuracy: ±(0.006% + 4d)
Frequency Range: 5Hz to 2MHz

Frequency
Ranges: 5Hz to 200KHz; Best Resolution: 0.001Hz
Accuracy: ±(0.006% + 4d)
Input Sensitivities (Range/Sensitivity):
(500mV / 0.1V), (5V / 0.5V), (50V / 4V), (500V / 40V), (1000V / 400V), (5000µA / 1000µA), (500mA / 100mA)

Duty Cycle
Range: 0 to 90%; Resolution: 0.01%
Accuracy: ±10%

General Specifications
Operating Temperature:
0 to 30ºC (32 to 86ºF) @ 80% Relative Humidity
31 to 51ºC (87 to 124ºF) @ 50% Relative Humidity
Power: (6) AAA Batteries
Size: 7.9" (H) x 3.94" (W) x 1.57" (D)
Weight: 1.23 lbs
Accessories: Manual, test leads, RS232 cable and software CD

80,000 Count Digital Multimeter

- 80,000 count Dual Display
- Basic DC accuracy is 0.05%
- Pulse output with frequency selection from 0.5Hz to 5KHz with duty cycles from 1% to 99%
- Measures frequency, ms Pulse width and duty cycle
- AC and AC+DC TRUE RMS measurements.
- Hi and Lo limit testing
- dBm measurement using 20 reference Impedances
- Min/Max/AVG
- Peak hold and Relative mode
- RS232 port
- CE and Category II 1000V and Cat III 600V safety standards
- Built in 10 hour timer

6800

SPECIFICATIONS

mV DC
Ranges: 80 mV, 800 mV; Best Resolution: 1µV
Accuracy: ±0.05% + 10d; Input Impedance: 1GΩ

DC Volts
Ranges: 8V, 80 V, 800V, 1000V; Best Resolution: 100µV
Accuracy: ±(0.05% + 10d); Max. Input Voltage: 1000V DC
Input Impedance: 10MΩ

AC mV/Volts TRUE RMS
Ranges: 80mV, 800mV, 8V, 80V, 750V
Best Resolution: 1µV
AC Volts Accuracy (80mV, 800mV, 8V ranges):
50/60Hz: ±(0.5% + 10d)
50Hz ~ 1KHz: ±(1.0% +10d)
1KHz ~ 10KHz: ±(3.0% + 10d)
10KHz ~ 20KHz: ±(5.0% + 10d)
AC Volts Accuracy (80V and 750V Range):
1% from 50Hz to 400Hz
AC + DC V Accuracy: ±(1.0%+ 10d) 50Hz to 200Hz
Max. Input Voltage: 1000 V DC or AC peak
Input Impedance: 10MΩ (1GΩ 80mV and 800mV)

DC Current
Ranges: 80mA, 800mA, 8A, 10A; Best Resolution: 1.0µA
Accuracy: ±(0.5% + 10d)
Overload Protection: 0.8A/250V fuse and 10A/250V fuse

AC True RMS Current
Ranges: 80mA, 400mA, 8A, 10A; Best Resolution: 1.0µA
Accuracy: ±(0.5% + 10d) 50Hz to 1KHz
Accuracy AC+DC Amps: ±(1.0% + 10d) 50Hz to 200Hz
Overload Protection: 800mA/250 fuse and 10A/250V fuse

DBM
Range: -80dBm to +80dBm; Best Resolution: -0.01dBm
Accuracy: ±(1.0% or reading)
Default Ref impedance is 600Ω, Ref. Impedances from 4Ω to 1200Ω maybe selected

Resistance
Ranges: 800Ω, 8KΩ, 80KΩ, 800KΩ, 8MΩ, 80MΩ
Best Resolution: 10.0mΩ; Accuracy: ±(0.3% + 10d)
Max. Input Voltage: 250V

Diode and Continuity Test
Range: 8.00V; Accuracy: ±(3% + 10d)
The Buzzer sounds when the measured resistance is <50Ω

Frequency
Ranges: 1KHz, 10KHz, 100KHz, 1000KHz, 8MHz
Best Resolution: 0.01Hz; Input sensitivity: 0.7V AC rms
Accuracy: ±(0.05% + 5d); Max. Input Voltage: 250V
Frequencies to 1Ghz can be read with optional adapter
Secondary display reads: Duty cycle and mS pulse width

RPM
Range: 0 to 99,999; Resolution: 1RPM
Accuracy: ±(0.1% + 5d)
Note: The RPM function is the secondary display of the frequency measurement and requires the RPM adapter

Capacitance
Ranges: 1nF, 10nF, 100nF, 1µF, 10µF, 100µF.
Best Resolution: 1pF
Accuracy: ±(2.5% + 10d), (±5% + 10d), 1nF range
Maximum Input Volts: 250V

Temperature
Ranges: -50 to 1372°C (-58 to 2502°F)
Thermocouple: K type
Display: °C primary display °F secondary display
Resolution: 0.1°
Accuracy: ±(2.5% + 8d)

Square wave Generator
Amplitude: Approx 3V
Frequencies from 0.500Hz to 5.000KHz may be selected in 15 Steps
Duty Cycle: Variable from 1% to 99%

General Specifications
Operating Temperature: 0 to 50ºC (32 to 122ºF)
Power: 9Volt battery @ 36 Hours of operation
Size: 7.5" (H) x 3.54" (W) x 1.45" (D)
Weight: 1.43 lbs
Auto Power-Off: 30 minutes or the timer value.
Accessories: Instruction manual, Test leads, Holster, Temperature probe, 9V battery, RS-232 software and cable

Protek Test & Measurement
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AC/DC Current Clamp-on Transducer

601C
602C

601C

601C

- The 601C extends the range of any DMM to measure AC/DC Amps to 1000 Amps
- Zero Adjust for DC Amps
- Jazg to 2.2 inches
- True RMS reading for AC current
- CAT II 1000V

602C

602C

- Measures AC Current to 400 Amps
- Jaw opening to 1.1 inches
- 1mV/A and 10mV/A current scale factors
- CAT II 600V
- Great for plant maintenance and HVAC
- Small sized and sturdy construction

SPECIFICATIONS

601C

Current Range DC: 1Amp to 1000Amps
Current Range AC: 1Amp to 1000Amps RMS
Scale Factor: 1mV/A
Accuracy: ±(3% + 5d) AC and DC Amps
Working Voltage: 1000V Cat II
Power: 9 Volt battery
Operating Temperature: 0ºC to 40ºC (32º F to 104ºF)
Storage Temperature: -10ºC to 50ºC (14ºF to 122ºF)
Jaw Size: 2.1 inches:
Size: 10”(L) x 4”(W) x 2”(D)
Weight: 1.1 lbs (520 grams)
Accessories: Hard carrying case and Operating manual

602C

Current Range DC: 0.1A to 400Amps RMS
Scale Factors: 1mV/A
10mV/A
Working Voltage: 600V CAT II
Operating Temperature: 0ºC to 50ºC (32ºF to 122ºF)
Storage Temperature: -20ºC to 60ºC (-4ºF to 140ºF)
Weight: 0.5 lb
Accessories: Soft carrying case and Operating manual

604C 1000A AC/DC True RMS Clamp-on Meter

- Measure AC/DC current to 1000 Amps
- Jaws can hold 1.6" conductors
- Auto Manual ranging
- 3 ¾ digit 4000 count back lit LCD display with Analog bargraph
- Frequency measurements to 1000KHz
- Conforms to 1010-1 and 1010-1-032 standards and CATIII 600Volts
- Continuity and Diode test

604C

SPECIFICATIONS

- **DC Amps**
  Ranges: 400Amps and 1000Amps
  Best Resolution: 0.1mA
  Accuracy: ±(3.0%+5dgt.)
  Max: 1000Amps DC

- **AC Amps**
  Ranges: 400Amps and 1000Amps
  Best Resolution: 0.1mA

  Accuracy: ±(2.5%+5dgt.) < 600 Amps
  ±(3.0%+5dgt.) ≥ 600 Amps
  Max: 1000Amps AC

- **Volts DC**
  Ranges: 4V, 40V, 400V, 1000V
  Best Resolution: 1mV
  Accuracy: ±(0.8%+3dgt.)
  Input Impedance: 10MΩ

- **Volts AC**
  Ranges: 4V, 40V, 400V, 700V
  Best Resolution: 1mV
  Accuracy: ±(1.0%+5dgt.)
  Input Impedance: 10MΩ

- **Resistance**
  Ranges: 400Ω, 4KΩ, 40KΩ, 400KΩ, 4MΩ, 40MΩ
  Best Resolution: 100mΩ
  Accuracy: ±(1.0%+5dgt.)

- **Frequency (Input Terminals)**
  Range: 40Hz to 100KHz
  Best Resolution: 0.01Hz
  Accuracy: ±(0.1%rdg +2dgt.)

- **Frequency (From Clamp)**
  Range: 40Hz to 400 Hz
  Best Resolution: 0.01Hz
  Accuracy: ±(0.1%rdg +2dgt.)

- **Continuity Buzzer**
  Buzzer will sound < 40Ω Resistance

- **General Specifications**
  Power: (3) 1.5V AAA batteries
  Size: 9"(L) x 3.4"(W) x 1.3"(D)
  Weight: 1 lb
  Accessories: Operating manual and Test leads

B8012 2MHz Function Generator

- 6 Frequency ranges
- Sine, Square Ramp and Pulse Wave forms
- Built in 30MHz Frequency counter
- Less than 1.0% Sine wave distortion
- Variable Symmetry
- TTL Sync output
- VCF input
- Greater than 60dB Attenuation

B8012

SPECIFICATIONS

- **Output Characteristics**
  Frequency Range: 2Hz to 2MHz
  Ranges: x20, x200, x2K, x20K, x200K, x2M
  Output Level: ≥ 16V (no load)
  ≥ 8V (50?)
  Attenuation: 0dB, 20dB, 40dB + Amp
  Waveforms: Sine, Square, Ramp and Pulse
  Impedance: 50?
  DC offset: 0 to ± 8.0V (no load)
  0 to ± 4.0 (50?)

- **Sine Wave**
  Distortion: 0% from 20Hz to 20KHz
  Flatness: ≤ ± 1dB

- **Square wave**
  Rise/Fall Time: ≤ 30nS (into 50?)

- **Triangle**
  Linearity: > 99% to 100KHz

- **Pulse**
  Duty cycles of 10% to 90% may be obtained

- **TTL output**
  Rise/Fall time: ≤ 50nS
  Low Level: ≤ 0.4V
  High Level: ≤ 3.5V
  Impedance: 100?

- **Frequency Counter (Ext.)**
  Measuring Range: 0.5Hz to 30MHz
  No. of Digits: 6
  Accuracy: ≤ 0.1% + 1count
  Sensitivity: ≤ 500mV RMS
  Input Impedance: 100?
  Max input V: 50V p-p

- **General Specifications**
  Line Voltage: 120 / 220V selectable
  Frequency: 50 to 60Hz
  Dimensions: 9”(W) x 3.3”(H) x 9.4”(D)
  Weight: 3.9 lbs
  Accessories: BNC cable, Power cord, and Operating manual

2 MHz Sweep Function Generator

- Sine, Square, Ramp and Pulse wave forms
- Built-in 2MHz frequency counter
- 7 frequency ranges with 100:1 frequency control
- Less than 0.5% sine wave distortion
- Variable symmetry
- Sweep time from 20ms to 2 seconds
- TTL sync output

B8011

SPECIFICATIONS

Output Characteristics
Frequency Range: 0.02Hz to 2MHz
Ranges: 7
Output level:
High: 10Volts into 50Ω
Low: 1V P-P into 50Ω
Waveforms: Sine, Square, Ramp, Pulse
Impedance: 50Ω
DC offset: 5.0V in to 50Ω

Sine Wave
Distortion: <0.5% from 5Hz to 20KHz

Triangle
Linearity: >99% to 100KHz

Square wave
Rise/Fall Time: <100ns (into 50)

Pulse
Duty Cycles: 20:80 to 80:20 may be obtained

Sweep
Types: Linear
Sweep time: 2ms to 20s
Sweep width: variable to 100:1

Frequency Counter
Modes: Internal and external
Measuring Range: 0.005Khz to 2000KHz
No. of digits: 4
Accuracy: 0.01% + 1count
Sensitivity: 100mV rms
Input Impedance: 1MΩ + 25pF
Max input V: 150V DC and AC rms

General Specifications
Line Voltage: 120/220V, 50/60Hz
Dimensions: 3.1" (H) x 9.0" (W) x 10.4" (D)
Weight: 4.4 lbs
Operating Temperature: 0 to 45ºC (32 to 113ºF)
Accessories: Manual, Line cord, BNC cable

4 MHz Sweep Function Generator

- Wide 0.004Hz to 4MHz Frequency range
- CW/Triggered and Gated modes
- Sweep output and VCG input
- 1000:1 linear sweep and 10,000:1 frequency log sweep widths
- Settable Sweep Start and Stop Frequencies
- Low Distortion sinewave

B8400

SPECIFICATIONS

Frequency Characteristics
Frequency Range: 0.004Hz to 4MHz in 7 ranges
Ranges: x1, x10x, x100, x1K, x10k, x100k, x1M
Dial Accuracy: 5% of full scale

Output Characteristics
Waveforms: Sine, Square, Triangle, TTL Pulse
High output:
Amplitude: 15mV to 10V (into 50Ω)
DC Offset: 0 to ±5 into 50Ω
Impedance: 50Ω
Attenuator: 30dB variable
Low Output:
Amplitude:0 to 1V (into 50Ω)
DC Offset: 0 to ±0.5 (into 50Ω)
Impedance: 50Ω
Attenuator: 30dB variable

Sine Wave
Frequency Range: 0.004Hz to 4MHz
Flatness:
±2.0 % (0.004Hz to 400KHz)
±10% (400KHz to 4MHz)
Harmonic Distortion:
< 0.5 % on the 1K and 10K range
1% on the x1, x10, x 100 and x100K ranges
25dBc on the x1M range

Square Wave
Frequency Range: 0.004Hz to 4MHz
Rise/Fall Time: < 50ns into 50Ω (High output terminals)
Symmetry: ±1% to 100KHz, ±5% to 4MHz

Triangle
Linearity: > 99% to 200KHz

Operating modes
CW, Triggered, Gated, Sweep, Manually Triggered
Trigger/Gate input level: TTL
Trigger/Gate Frequency Range: to 4MHz Max.
Trigger/gate minimum pulse width: < 50ns

Sweep
Type: Linear and Log
Sweep Time: 30ms to 60 seconds continuously variable
Sweep width: 1:1,000 linear; 1:10,000 log continuously variable. Sweep start and stop frequencies may be set with the Freq dial and the Freq. Stop control.

Outputs
Sync: TTL level
GCV: output proportional to the selected frequency, 0 to -5V
Sweep: 4V P-P; Impedance: 600Ω

VCG Input
Input Voltage: 0 to ±4V P-P will cause a 1:1,000 frequency change (linear) and 1:10,000 (Log)
Input Impedance: 2KΩ

General Specifications
Operating Temperature: 0 to 50°C (32 to 120°F)
Dimensions: 3.5" (H) x 11.4" (W) x 10.6" (D)
Weight: 5 lbs
AC line Voltage: 120/220V, 50/60Hz
Accessories: Manual, Line cord, BNC cable

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B8110 10MHz Sweep Function Generator

- Wide 0.01Hz to 10MHz frequency range
- Log/Lin sweep
- Burst /gate and triggered modes
- Output may be FM modulated using the VCG input.
- Low distortion Sine wave
- Sweep start and Stop capability

B1990 10MHz Pulse Generator

- 1Hz to 10MHz Frequency Range
- Variable Pulse width and Delay
- Manual and External triggering
- Output amplitude to 5V p-p (into 50Ω)
- May be crystal controlled

B8110

B1990

SPECIFICATIONS

[B8110]

Frequency Characteristics
Frequency Range: 0.01Hz to 10MHz

Output Characteristics
Waveforms: Sine, Square Pulse, Triangle and ramp
Impedance: 50Ω
Attenuator: 20dB, 40 dB, 60dB and 20 dB variable
Amplitude: 0 to ±10 Volts in to an open circuit
DC Offset: 0 to ±10 V in to an open circuit (0 to ±5 into 50Ω)

Sine Wave
Frequency Range: 0.01Hz to 10MHz
Flatness: ±3.5% from 0.01Hz to 100KHz
±10% 100KHz to 10MHz
Harmonic Distortion: < 0.5 % from 10 Hz to 40KHz
Symmetry: 20:80 to 80:20

Square Wave
Frequency Range: 0.01Hz to 10MHz
Rise/Fall Time: < 25ns into 50Ω

Pulse
Frequency Range: 0.01Hz to 10MHz; Rise Time: < 10ns
Duty Cycle: adjustable symmetry control from 20:80 to 80:20

Ramp and Triangle
Linearity: > 99%

Operating Modes
CW, Triggered, Gated, Burst Sweep
Trigger/Gate input level: TTL
Trigger/Gate Frequency Range: DC to 100KHz
Burst time: 1ms to 10s

Sweep
Type: Linear and Log
Sweep Time: 1ms to 2s in 2 ranges, continuously variable
Sweep width: 1:100 continuously variable. Sweep start frequency may be set with the SET/MOD control.

Modulation
Type: AM
Input: External Through the MOD input connector
Frequency: DC to 1MHz
Modulation Range: 0 to 100%
Modulation Voltage: 0 to 5V P-P
Type: FM:
Input: External through the VCG input
Tuning Range: 1000:1 with an input of 0 to -5V

Outputs
Sync: TTL level
GCV: output proportional to the selected frequency, 0 to -5V
Sweep: 0 to -5V; Sweep/Burst Gate: TTL level

General Specifications
Operating Temperature: 0 to 50°C (32 to 120°F)
Dimensions: 4.3" (H) x 12.5" (W) x 14" (D)
Weight: 15 lbs
AC line Voltage: 120/220V, 50/60Hz
Accessories: Manual, line cord, BNC cable

[B1990]

Frequency Characteristics
Frequency Range:
Internal: 1Hz to 10MHz (100ns to 1s) in 7 ranges
Xtal: 10Hz to 10MHz

Output Characteristics
Amplitude: 0.5 to 5V p-p (into 50Ω)
Impedance: 50Ω
Input Impedance: 2KΩ
Rise Time: 10ns (into 50Ω)
Output Polarity: Positive or Negative
Pulse Width Range: 50ns to 5ms in 5 ranges
Pulse Delay Range: 0 to 2µs in

Trigger
Trigger modes:
Internal, Ext (+ or - edge triggered), Xtal and Manual
Trigger out:
Width: 20ns; Amplitude: 5V; Impedance: 50Ω
External Trigger in:
Input V range: +1.0V to -1.0V P-P (sine or square wave)
Repetition Rates: 10Hz to 10MHz; Impedance: 2KΩ

General Specifications
Operating Temperature: 0 to 40°C (32 to 104°F)
at less than 85% humidty
Stability: 0.1% per hour after warm up
Dimensions: 4.3" (H) x 11.4" (W) x 10.2" (D)
Weight: 6.4 lbs
AC line Voltage: 120/220V, 50/60Hz
Accessories: Manual, line cord, BNC cable

B8003FD
B8010FD
B8020FD
B8040FD

B8000FD Series DDS Function Generators

- Built with highly stable and reliable Direct Digital Synthesis (DDS) technology
- The B8000FD series of Function Generators consist of 4 models with Frequency ranges from 1μHz to 3MHz **B8003FD** / 10MHz **B8010FD** 20MHz **B8020FD** / 40MHz **B8040FD**
- Sine, Square, Pulse, Triangle, Ramp, Sine (x)/x, Exponential up, Exponential down and noise waveforms.
- All models have a Dual output with a second 0.1Hz to 20KHz output with all internal waveforms available
- AM (int/ext), FM (int), FSK, ASK, PSK and Burst
- Linear & logarithmic sweep
- Excellent long and short term frequency stability
- RS232 interface.
- Built in 100MHz Frequency counter
- Convenient keyboard entry of all waveform parameters

B8003FD
B8010FD
B8020FD
B8040FD

SPECIFICATIONS

Waveforms
Sine, Square, Triangle, Ramp Noise, Sin (X)/x, Exp Up, Exp down and Pulse.

Frequency Range
Sine: 1μHz to 3MHz **B8003FD**
1μHz to 10MHz **B8010FD**
1μHz to 20MHz **B8020FD**
1μHz to 40MHz **B8040FD**
Square: 1μHz to 5MHz (3MHz for the **B8003FD**)
1μHz to 1MHz (All other waveforms)
Ramp and Triangle: 1μHz to 1MHz
Stability: Long term 50ppm, Short term: 1ppm
Resolution: 0.1μHz or 8 digits
Accuracy: 0.4Hz (>3.1KHz)
0.1μHz(<100MHz)

Waveform Characteristics
Sine Wave
Harmonic distortion: <20 KHz: -54dBc (0.20%)
20 KHz to 1MHz: -48dBc (0.4%)
1 MHz to 10MHz: -40dBc (1.0%)
10MHz to 20MHz: -22dBc (2.5%)
Square Wave
Rise / Fall Time: <10nS (1Volt p-p in to 50Ω)
Asymmetry: <1%+20nS

Pulse: Duty cycle: 0.1% to 99.9% (<10KHz)
1% to 99% (<100KHz)
3% to 97% (<1MHz)
Rise/Fall time: <15nS
Ramp and Triangle
Linearity: < 0.1% (1KHz)

Outputs
Main output
Output Impedance: 50Ω
Amplitude: Open circuit: 2mV to 20V p-p (≤ 20MHz)
2mV to 6V p-p (40MHz)
50Ω load: 1mV to 10V p-p (≤ 20MHz)
1mV to 3V p-p (40MHz)
Resolution: 8 Bits
Amplitude Flatness: 5%
DC Offset range: -100% to +100% of Peak Value

Output B
Waveforms: All internal waveforms
Amplitude: 200mV to 20V p-p
Frequency Range: 0.1Hz to 20KHz
Output Impedance: 600Ω

Sync output
Active for All wave forms and functions except Sine and Square waves.
Output Level: TTL
Pulse Duration:
On time: (Determined by the number of cycles in the selected modulation) 10 μS to 100s
Off time: the time between a burst end and the subsequent burst starts) 10 μS to 100s
Note: In sweep mode the Sweep trigger signal is high during the entire sweep

Sweep
Sweep modes: Lin and Log
Sweep width: From 1Hz to max waveform freq.
Sweep Speed: 10mS to 10s
Sweep Trigger: Internal, External, and Single

FSK, PSK, ASK Modulation
Carrier: All internal waveforms
Internal Rate: 9mHz to 50KHz
Frequency Range: 1Hz to the maximum frequency
Phase Range: (PSK) -360º to + 360º
Trigger: Internal, External and Single

Burst
Waveforms: All internal waveforms
Number of cycles: 1 to 65,535
Phase Range: -360º to + 360º
Frequency Range: 1Hz to the maximum waveform frequency
Trigger: Internal, External and Single

Amplitude Modulation: [Internal]
Modulation: depth: 0 to 100%
Carrier Frequency: 1Hz to the maximum waveform frequency
Carrier Waveforms: Internal waveforms; Except Square wave
Modulation Waveforms: Internal waveforms
Modulation Frequency: 10mHz to 20KHz

External Amplitude Modulation:
Input Impedance: 100KΩ
Modulation depth: a 0.4V p-p signal would 100% modulate a 1V p-p Sine wave

Frequency Modulation:
Carrier Waveforms: All internal waveforms
Carrier Frequency: 1.0Hz to the maximum waveform frequency
Modulation Waveforms: All internal waveforms
Modulation Frequency: 100mHz to 10KHz
Deviation: 0.1Hz to the maximum waveform frequency

Phase Modulation:
Carrier Waveforms: Sine, Square
Carrier Frequency:
Sine wave: 1μHz to the maximum Sine wave frequency
Square wave: 1Hz to the maximum Square wave frequency
Modulation Waveforms: All internal waveforms
Modulation Frequency: 100mHz to 10KHz
Maximum Phase Shift: 360º

Frequency Counter
Frequency Range: 1Hz to 100MHz
Input Signal Sensitivity: > 100mV
Interface: RS232: Baud Rate: 9600, Parity: None
Data bits: 8, Stop bits: 1

General Specifications
Input Voltage: 110V and 220V selectable
Input Power: 18 watts
Dimensions: 5.6"(W) x 3.0"(H) x 10.5"(D)
Weight: 4.34 lbs
Accessories: Operating manual, BNC cable w/ Alligator clips and AC power cord

Synthesized AM/FM Signal Generator

- 10 KHz to 1040KHz frequency range
- AM, PM and FM modulation
- -127dBm to +6dBm output level
- Self Test and Calibration capabilities
- 25W reverse power protection
- 100 location memory for storing Frequency, modulation and output level data
- Optional GPIB interface

B1240

SPECIFICATIONS

Frequency:
Range: 10KHz to 1040MHz
Display Resolution:
10Hz (10KHz to 520MHz), 20Hz (520MHz to 1040MHz)
Accuracy: ±1.5 x 10^{-6} after 20 minutes of warm up

Output Characteristics:
Output level Range: -127dBm to + 6dBm
Display Resolution: 0.1dB
Accuracy: ±1dB (> -10dBm), ±2dB (< -10dBm)
Amplitude Flatness:
< 0.5dB (10KHz to 1040KHz, -10dBm to +6dBm)
Output impedance: 50Ω
Amplitude Units: dBm and dBμ
Output Protection: 25W of reverse power

Spectral Purity:
Spurious:
Better than -35dB at carrier frequency < 62.5MHz and 0dBm
Better than -25dB at carrier frequency > 62.5MHz and 0dBm
Residual Modulation: FM: 7Hz, AM: 0.05%

Modulation

FM:
Deviation:
0 to 100KHz (1Mz to 1040MHz)
Carrier Freq. x 10% (below 1MHz)
Resolution:
10Hz (0 to 10KHz deviation)
100Hz (10KHz to 100KHz deviation)
Accuracy: ±5% for 1KHz or 400Hz modulation
Frequency Response: ±0.5dB (50Hz to 50KHz)
Distortion: < 2% THD (1KHz Mod., Max deviation and Carrier Freq. > 250KHz)

PM:
Range: 0 to 10 Radians
Resolution: 0.01 Radians
Frequency Response: ±1dB (10KHz to 10KHz)
Deviation Accuracy: ±5% at 1KHz Modulation

AM:
Range: 0 to 99%
Resolution: 0.5%
Accuracy: better than ±4% of depth setting + 1% at 1KHz
Frequency Response: ±0.5% (50Hz to 50KHz)
Envelope Distortion: < 3% THD (at 70% mod and 1KHz)
Modulation Oscillator: Frequency: 1KHz and 400Hz
External modulation Input:
Range: 10Hz to 50KHz
Input Level: 0.9V to 1.1V RMS (With Modulation ALC)
Input Impedance: 100KΩ (Approx.)

Memory:
Locations 0 to 19 store Frequency, Modulation and Output level data; Locations 20 to 99 store Frequency data only;
3 independent memories for storing output level data.

Display:
Carrier Frequency: 9-digit LED
Modulation: 3-digit LED
Output Level: 4 -digit LED
Memory Location: 2-digit LED

General Specifications
Input Power: 110/220V
Frequency: 50/60
Size: 4.7" (H) x 17" (W) x 17.7" (D)
Weight: 26.5 lbs
Standard Accessories:
Operation manual, Line cord and Type N cable
Optional Accessories:
GBIB interface

Protek Test & Measurement
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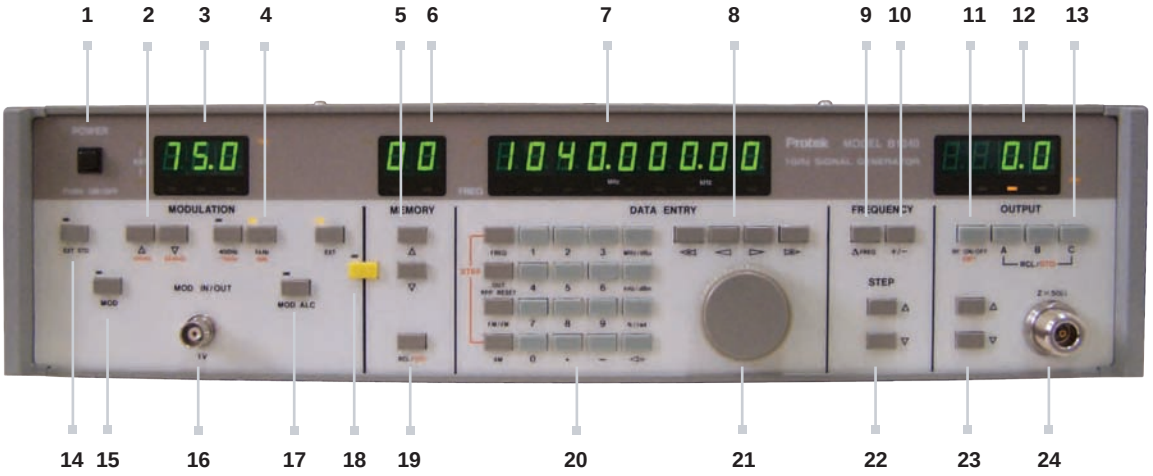


1. Power On/off.

2. Increases ▲ or decreases ▼ the % mod or Mod Frequency by a preset value. In the second function selects 3.5KHz or 22.5 KHz FM deviation.

3. Displays % Modulation in AM and Frequency Deviation in FM.

4. Selects 400Hz or 1KHz modulation frequencies. In the 2nd function selects 75KHz deviation or 30% AM modulation.

5. Increments or decrements the memory address.

6. Displays the Memory Address.

7. Displays the RF Output Frequency.

8. Function cursor keys
The outer 2 keys selected the display to be changed; the inner 2 keys select the digit in the selected display to be changed.

9. The Delta Frequency is used to generate a new output frequency by adding or subtracting the delta value to the current frequency.

10. +/- keys determine if the Delta frequency is added or subtracted to the current frequency.

11. Turns the output on or off. In the second function selects the dB units.

12. Displays the RF Output Level.

13. These keys are used to store preset RF output levels in memory and recall them when needed.

14. When pressed, an External Reference frequency will be used.

15. Modulation On or Off key.

16. The Input connector for the external modulation signal when External Modulation is selected. The Modulation output signal is present at this connector when internal modulation is selected.

17. When this key is press, the input-modulating signal is kept at a constant level. (0.9V to 1.1V)

18. 2nd Function Key, Some keys on the front are dual function, pressing this key enables the second function.

19. Selects if data is being stored in or recalled from the displayed memory.

20. Keypad
Enter values for the RF Frequency, output level, Modulation or memory display when selected.

21. Rotary knob
Used also for entering Frequency, output level, Modulation or memory values in the selected display.

22. Frequency step keys
Increases ▲ or decreases ▼ the frequency by a Preset value.

23. These keys increase ▲ or decrease ▼ the output level by a Preset value.

24. 'N' type RF 50Ω output connector.

PANELS

- High accuracy frequency measurements to 1.3 GHz
- Frequency Resolution to 0.1Hz
- High input sensitivity
- Large Bright 8 digit LED display With gate time and function indicators
- X10 attenuator
- Measures Frequency, Period and Totalise

SPECIFICATIONS

Frequency Measurement
Input A
Range: 10 Hz to 100MHz
Resolutions: 0.1Hz,
Gate Times: 0.01s to 10s in 4 decades
Accuracy: ±(Time base error + 1 count)

Input B
Range: 100MHz to 1.3GHz
Best Resolution: 10Hz
Gate Times: 0.01s to 10s in 4 decades
Accuracy: ±(Time base error + 1 count)

Totalize: Input A
Frequency range: DC to 10MHz
Count Capacity: 0 to 99,999,999 counts
Resolution: 1 count
Minimum Pulse width: 250ns
Accuracy: ±1 count

Period: Input A
Range: 1.0 µs to 100ms (10Hz to 1MHz)
Minimum pulse width: 250nS
Resolutions: 100ps, 1ns, 10ns, 100ns
Accuracy: ±(Time base error + 1 count) + Trigger error

Input Characteristics
Input A
Sensitivity: 50 mV (10Hz to 100Hz)
20mV (100Hz to 100MHz)
Input Impedance: 1MΩ + 30pF capacitance
Attenuator: x1, x10
Coupling: AC
Maximum input volts: 30V rms

Input B
Sensitivity: 15mV (100MHz to 1000MHz)
40mV (1000MHz to 1300MHz)
Input Impedance: 50Ω
Coupling: AC
Max input Volts: 7V

Time Base
Frequency: 10.00000MHz
Stability: ±3 PPM per week

General Specifications
AC input Volts: 120V or 220V
Line Frequency: 50/60Hz
Operating temperature: 0 to 40°C (32 to 104°F)
Size: 4.0" (H) x 10.0" (W) x 11.0" (D)
Weight: 3.75 lbs
Accessories: Line cord, Manual, BNC cable

3.0GHz Universal Counter

- High accuracy frequency measurements to 3.0GHz
- Measures Frequency, Period, Time Interval, Ratio and Totalize
- High Stability TXCO
- Variable Trigger level on Inputs A and B
- Large Bright 8 digit LED display With gate time and function indicators
- Low Pass filter and X10 attenuator

SPECIFICATIONS

Frequency Measurement

Input A
Ranges
Low Range:
DC coupled: 0.1Hz to 10MHz
AC coupled: 10Hz to 100MHz
High Range: 10MHz to 100MHz
Best Resolution:
Low Range: 0.1Hz
High Range: 1Hz
Gate Times: 0.01s to 10s in 4 decades
Accuracy: ±(Time base error + 1 count)

Input B: (Used only for Ratio A/B and Time interval)
Range:
DC coupled: 0.1 to 10MHz
AC coupled: 10Hz to 100MHz

Freq C
Range: 100MHz to 3.0GHz
Best Resolution: 10Hz
Gate Times: 0.0128s, 0.128s, 1.28s and 12.8s
Accuracy: ±(Time base error + 1 count)

Totalize
Input: A
Frequency range: DC to 10MHz
Count Capacity: 0 to 99,999,999 counts
Resolution: 1 count
Minimum Pulse width: 250ns
Accuracy: ±1 count

Time Interval: (A→B)
Inputs: A and B
Range: 0.5µs to 200ms (5Hz to 2MHz)
Minimum Pulse Width: 250ns
Best Resolution: 100ns
Multipliers: x1, x10, 100, 1000
Accuracy: ±(Time base error + 1 count) ±Input A Trigger error ±Multiplier

Ratio: (A/B)
Inputs: A and B
Range:
CHA: 10MHz to 100MHz
CHB: 0.1Hz to 10MHz
Resolution: Input B/(input A x multiplier)
Accuracy: ±Input B trigger error/Input B x Gate time) ±1 count

Period: Input A
Range: 0.5µs to 200ms (5Hz to 2MHz)
Minimum pulse width: 250ns
Best Resolution: 100ps
Accuracy: ±(Time base error + 1 count) ±Input A Trigger error

Input Characteristics:

Inputs A & B
Sensitivity: ≤25mV
Input Impedance: 1MΩ + 40pF capacitance
Attenuator: x1, x10
Coupling: AC and DC
Low pass filter: To approx. 100KHz
Slope: Plus or Minus
Trigger level: ±350mV variable and 0V fixed
Maximum input volts: 250V DC or AC peak

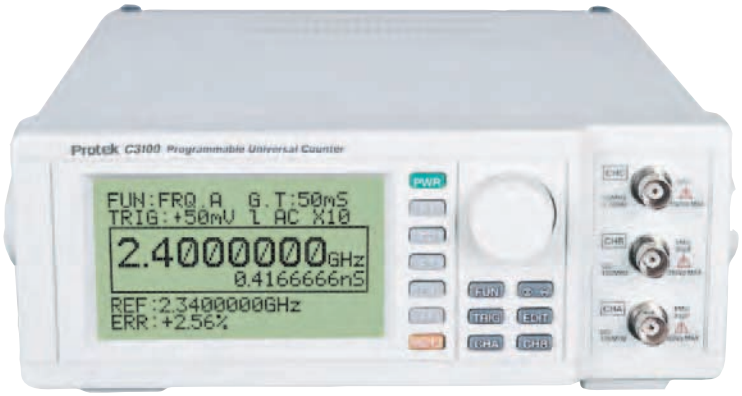
Input C
Frequency Range: 100MHz to 3.0GHz
Sensitivity:
≤15mV (100MHz to 800MHz)
≤60mV (800MHz to 3.0 GHz)
Maximum input voltage: 3V rms
Attenuator: None
Input Impedance: 50Ω
Coupling: AC

Time Base
Type: TXCO
Frequency: 10.00000MHz
Stability: ±3.0 PPM per week
Time base output: 500mV p-p into 50Ω

General Specifications
AC input Volts: 100V/120V/220V/240V
Line Frequency: 50/60Hz
Power consumption: 20VA
Operating temperature: 0 to 40°C (32 to 104°F)
Size: 4.0" (H) x 10.0" (W) x 11.0" (D)
Weight: 5.25 lbs
Accessories: Manual, Line cord, BNC cable

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

- Accurate frequency measurements to 2.4GHz
- Measures Frequency, Period, Duty Cycle, RPM, Frequency ratio, Difference frequency, Time interval and Totalize
- Nine measurement functions
- Plots trend graph on LCD display
- Compare, Relative Error and Min/Max functions
- Standard RS-232 with optional GPIB interface
- Eight setup screens may be saved and retrieved from memory
- Software for controlling, displaying data and data logging
- Operates on all line voltages from 85V to 270V without any changes



C3100

SPECIFICATIONS

Frequency Measurement
Freq A
Ranges: DC coupled: 0 to 120MHz
AC coupled: 10Hz to 120MHz
Resolution: 0.00001Hz @ 200Hz
Gate Times: 50ms to 10s (20 settings)
Accuracy: ±2PPM; Coupling: AC or DC
Trigger Level: ±1.8V in a scale from -99 to +99
Freq B
Ranges: DC coupled: 0 to 120MHz
AC coupled: 10Hz to 120MHz
Resolution: 0.00001Hz @ 200Hz
Gate Times: 50ms to 10s (20 settings)
Accuracy: ±2PPM; Coupling: AC or DC
Trigger Level: ±1.8V in a scale from -99 to +99
Freq C
Ranges: 100MHz to 2.4GHz
Resolution: 100Hz @ 500MHz
Gate Times: 50ms to 10s (20 settings)
Accuracy: ±2PPM + 1 count
Coupling: AC only
Trigger Level: Auto

Totalize
Input: CH A
Frequency Range: DC to 10MHz
Count Capacity: 0 to 99,999,999 counts
Resolution: 1 count
Accuracy: ±1 count

Time Interval (A→B)
Input: CH A and CH B
Range: 0.5µs to 200,000µs
Minimum Pulse Width: 250ns
Resolution: 1µs
Accuracy: ±1 count + timebase accuracy

Ratio (A/B)
Inputs: CH A and CH B
Range: CH A: 10MHz to 150MHz
CH B: 0.1MHz to 10MHz
Resolution (0.000001)

Duty Cycle
Input: CH A
Measurement Range: 0.01% to 99.99%
Frequency Range: 0 to 100KHz

RPM
Input: CH A
Measurement Range: 0 to 600,000 RPM
Minimum Pulse Width: 250ns
Resolution: 0.1 RPM

Input Characteristics
Channel A & B
Frequency Range: 0 to 120MHz
Sensitivity: 25mV
Input Impedance: 1MΩ + 35µF capacitance
Attenuator: X1, X10
Maximum Input Volts: 250V DC or AC peak

Channel C
Frequency Range: 100MHz to 2.4GHz (usable to 2.7GHz)
Sensitivity: 25mV RMS (100MHz to 2.4GHz)
Maximum Input voltage: 5V DC or AC peak
Attenuator: None
Input Impedance: 50Ω

Reference Timebase Oscillator
Standard Frequency: 10MHz, 4.194304MHz
Frequency Stability: ±5.0 PPM Max
Aging Rate: ±1.0 PPM Max/Yr
Temperature: -30 to +60°C (-22 to +140°F)
Storage Temperature Range: -40 to +85°C (-40 to +185°F)

Software
The supplied software is a Windows®-based program, which runs under Windows 95/98/ME/XP/2000. It allows the user to set the Instrument Parameters from the PC via the RS-232 interface and provides time stamped data logging for all functions.

General Specifications
Display: 128 × 64 pixel super twist LCD
Line Voltage: AC input Volts: 85 to 270V AC ±10%
Line Frequency: 48Hz to 66Hz
Power Consumption: 15W
Operating Temperature: 0 to 40°C (32 to 104°F)
Size: 3.3" (H) x 11.6" (W) × 11.0" (D); Weight: 4.4 lbs
Supplied Accessories: Manual, Line cord, BNC cable, Software, RS-232 cable
Optional Accessories: GPIB (installed)

LCR Meter

- Measures L, C, R, |Z|, Q and D
- Displays component value, Q or D, Delta, or Delta%
- 5 digit display for component value and Q/D
- Auto ranging or Range hold
- Built-in comparator with 4 bin-sorting function
- Open and short circuit calibration for accurate zeroing
- Series and parallel equivalent circuit modes
- Three test frequencies
- Warning alarm for pass or fail binning
- Easy to use

Z8200

SPECIFICATIONS

Measurements
Components:
L (Inductance)
C (Capacitance)
R (Resistance)
Z (Impedance)
Circuit Configuration: Series and Parallel
Parameters Displayed: Measured values, absolute Delta and Delta %

Resistance/Impedance
Measured Parameter: R + Q and |Z|
Measurement Range:
R: 1mΩ to 999.99MΩ
Q: 0.0001 to 99999

Inductance
Measured Parameter: L + Q
Measurement Range:
L: 1µH to 999.99H (100Hz & 120Hz)
L: 0.1µH to 999.99 (1KHz)
Q: 0.0001 to 99999

Capacitance
Measured Parameter: C + D
Measurement Range:
C: 1pF to 999.99µF
D: 0.0001 to 99999

Test Environment
Test Frequency: 100Hz, 120Hz, 1KHz
Test Voltage: 0.3V RMS
Drive Voltage Accuracy: ±10%
Measurement Rate: 2 Measurements/Sec
Ranging: Auto or Hold

Measurement Accuracy
Basic Accuracy: ±0.3% @ 23°C ±5°C (73°F ±9°F)
(See user manual for detailed accuracy conditions)
Zero Input Correction: Open and short circuit

General Specifications
Power Requirement: AC Voltage Input: 120/220V
Frequency: 50/60Hz
Power Consumption: 10W (Max)
Operating Temperature:
0 to 40°C (32 to 104°F) at ≤ 85% Relative Humidity
Size: 4.3" (H) x 10.6" (W) x 10.2" (D)
Weight: 5.5 lbs
Accessories: Manual, Line cord, Test leads with Kelvin clips

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

High Accuracy, Wide Range LCR Meter with LCD Readout

- 0.02% Basic accuracy
- Wide measurement Ranges for Capacitors, Resistors and Inductors
- Menus and parameters are displayed on an easy to read 320x 240 Graphics LCD with backlight
- Measurement Rates to 12 times per second
- 500 Test Frequencies from 12Hz to 100KHz
- Open and short-circuit compensation for accurate zeroing
- Binning and Pass/Fail operation
- Measurement averaging from 1 to 255
- Optional GPIB and handler interface
- LCD displays measured values, Q/D, Absolute △ and %△

SPECIFICATIONS

Measured Components
L(Inductance),C(Capacitance), R(Resistance)
Measurement Circuit configurations:
Series and Parallel

Measurements

Resistance:
Measured Parameter: R+Q
Measurement Ranges:
R: 10μΩ to 100MΩ
Q: 0.0001 to 9,999

Inductance:
Measured Parameter: L+Q
Measurement Range:
L: 0.01μH to 99,999 H
Q: 0.0001 to 9,999

Capacitance:
Measured Parameters: C+D and C+R
Measurement Range:
C: 0.00001pF to 99,999μF
D: 0.0001 to 9,999
R: 0.0001Ω to 9,999KΩ

Display
Display Type: 320x 240 Graphics LCD W/Backlight
Display value: 5 digit LCR and a 4 digit Q/D measurement
Parameters Displayed: Measured values, absolute △ and %△

Test Environment
Test Frequencies: 500 test frequencies from 12Hz to 100KHz
Test Voltage: 5mV to 1.275V in 5mV increments
Test Voltage Accuracy: ±(5% + 5mV) (1 + 001 x F2)
Measurement rates:
Slow 1 Meas/sec
Medium: 5 Meas/sec
Fast: 12 Meas/sec
Measurement Delay: from 1ms to 99,999ms
Ranging: Auto or Manual.
DC Bias: Internal: 2V, External: 0 to 60V
Triggering: Continuous or Triggered
Zeroing correction: Open and short circuit
Averaging: 1 to 255 Avgs

Measurement Accuracy
Basic accuracy: ± >0.02% at 23°C ±5°C (73°F ±9°F), (See user manual for all accuracy conditions)
Remote Operation: GPIB and Handler (Optional)

General Specifications
AC Voltage input: 120 or 220 Volts
Frequency: 50/60 Hz
Power Consumption: 20Watts (Max)
Operating Temperature:
0 to 50°C (32 to 122°F) at ≤ 85% Relative Humidity
Size: 5.5" (H) x 15" (W) x 18" (D)
Weight: 17.6 lbs
Accessories: Manual, Line Cord, Kelvin leads with bag, GPIB Handler (Optional)

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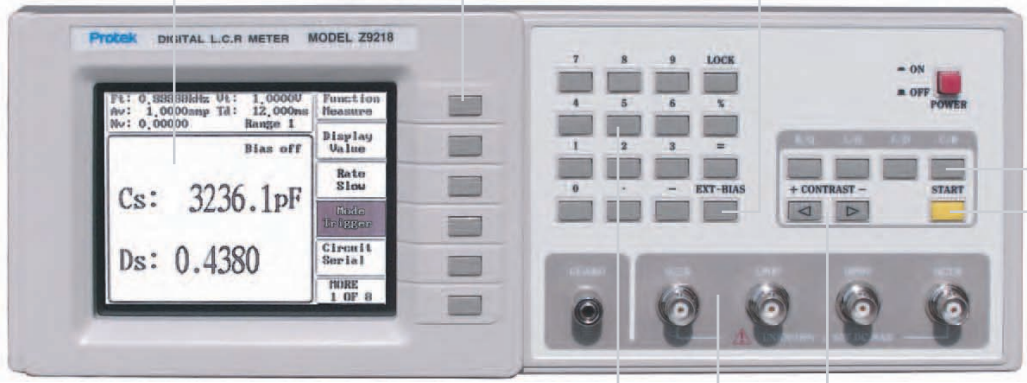
Website: www.protektest.com Email: sales@protektest.com

320 x 240 pixel LCD for displaying the component value along with its Q or D value in a absolute, △ or %△ display. Test Frequency, Test voltage, Circuit mode, Number of averages, Binning and the Soft Keys for selecting these parameters are also displayed.

The function Keys select the operating parameters displayed on the LCD. Trigger mode, Measurement rate, Component value in absolute, △ or %△ are some of the functions that may be selected.

EXT Bias key when in the C+D or C+R mode allows an external bias voltage up to 60V to be applied to the capacitor under test. This is normally used to stabilize a High value Electrolytic for an accurate reading.

Selects the type of component and parameter to be measured. R&Q, L&Q, C&D, C&R or Auto may be selected.



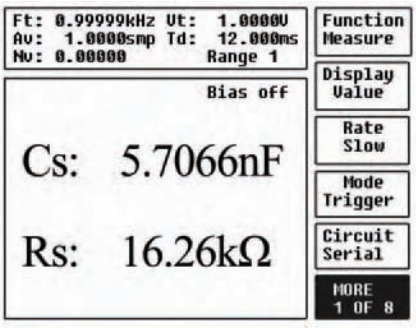
Numeric keyboard for entering Test Frequency, Voltage values, Number of averages, Cal Data Measurement delay and Nominal values.

Four wire input: 2 inputs supply the drive signal and 2 inputs are for input sensing, thereby removing errors caused by lead length.

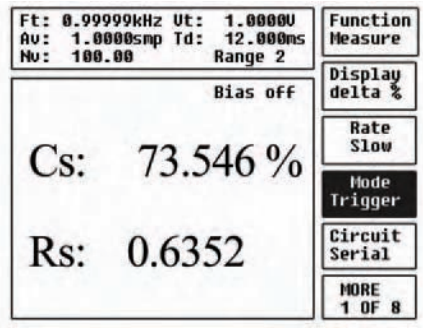
These two keys are used to adjust the contrast of the LCD display.

The start key initiates a measurement in the triggered mode.

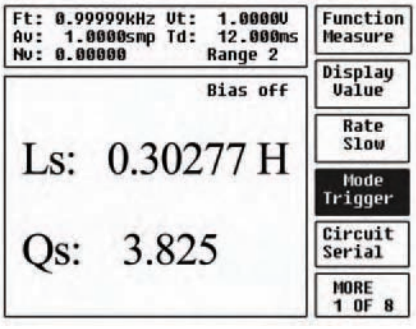
SCREENS



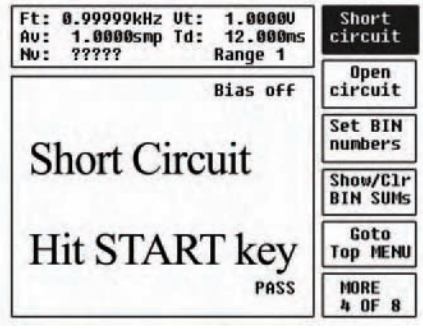
C/R MEASUREMENT SCREEN



C/R △% MEASUREMENT SCREEN



L/Q MEASUREMENT SCREEN



SHORT CIRCUIT CALIBRATION SCREEN

Z530 Handheld Digital LCR Meter w/ RS232 interface
CM110 Handheld Digital Capacitance Meter
CL200 Handheld Digital L/C Meter

Z530

- 3 5/6 digits, 6,000 count LCD display
- Optically isolated RS232 interface with software
- Auto and manual ranging
- Wide measurement ranges
- Min/Max measurements and Auto power off
- Rubber over molded case for rugged environments

CM110

- Zero adjust for compensating stray capacitance
- Large easy to read 3-1/2 digits, 2000 count LCD
- 0.5% measurement accuracy
- Fused input
- 9 capacitance measurement ranges
- Three measurement frequencies

CL200

- Six capacitance ranges and four inductance ranges
- High accuracy measurement
- Automatic zeroing
- Low battery indicator
- Fuse protected input
- Large easy to read 3-1/2 digits, 2000 count LCD

SPECIFICATIONS

Z530

- **Resistance**
  Ranges: 600Ω, 6KΩ, 60KΩ, 600KΩ, 6MΩ, 60MΩ
  Best Resolution: 0.1Ω
  Accuracy: ± (1% + 2d): 600Ω to 6M Ω ranges

- **Capacitance**
  Ranges: 6nF, 60nF, 600nF, 6µF, 60µF, 600µF, 6mF
  Best Resolution: 1pF
  Accuracy: ± (2% + 5d): 6nF Range
  ± (1.0% +5d): 60nF to 6µF ranges
  ± (1.5% +5d): 60 µF and 6mF ranges

- **Inductance**
  Ranges: 600µH, 6mH, 60mH, 600mH, 6H, 60H
  Best Resolution: 0.1µH
  Accuracy:
  ± (2.5% +10d): 600µH range
  ± (1.5% +8d): 6mH to 600mH ranges
  ± (1.5% +10d) ≤ 4H, ± (5.0% +10d) > 4H: 6H range
  ± (3.5% +20d) ≤ 40H, unspecified > 40H: 60H range
  Measurement Modes:
  Series on the 600µH to 600mH ranges
  Parallel on the 6H and 60H ranges
  Test Frequencies:
  1KHz series mode and 100Hz parallel mode

- **General Specifications**
  Power: (6) 1.5V AAA batteries
  Size: 8.0"(L) x 4.0"(W) x 1.6"(D)
  Weight: 1.2 lbs
  Accessories:Test leads, Operating manual, (6) 1.5V AAA batteries, Carrying case, Optically isolated RS232 Cable and Software

CM110

- **Measurement Condition:**
  Specifications are measured within a temperature range of 18°C to 28°C (64°F to 82°F)

- **Capacitance**
  Ranges: 200pF, 2nF, 20nF, 200nF, 2µF, 20µF, 200µF, 2000µF, 20000µF
  Best Resolution: 0.1pF
  Accuracy:
  ±(0.5% + 1d): 200pF to 200µ ranges
  ±(1% + 1d): 2000F range
  ±(2% + 1d): 20mF range
  Test Frequencies:
  200pF to 2µF ranges: 800Hz
  20µF range: 80Hz
  200µF to 20,000µF ranges: 8Hz
  Zero Adjustment Range: ±20pF

- **General Specifications**
  Power: 9V Battery
  Calibration Interval: 1 year
  Size: 7.4"(H) x 3.7"(W) x 1.3"(D)
  Weight: 0.5 lb
  Accessories:
  Operating manual, Test leads, Holster

CL200

- **Measurement Condition:**
  Specifications are measured within a temperature range of 18°C to 28°C (64°F to 82°F)

- **Capacitance**
  Ranges: 2nF, 20nF, 200nF, 2µF, 20µF, 200µF
  Best Resolution: 1pF
  Accuracy:
  ±(1% + 1d): 2nF to 200nF ranges
  ±(2% + 1d): 2µ to 200µF range
  Test Frequencies:
  2nF to 2µF ranges: 900Hz
  20µF and 200µF range: 80Hz

- **Inductance**
  Ranges: 2mH, 20mH, 200mH, 2H
  Best Resolution: 1µH
  Accuracy:
  ± (2% + 1d): 2mH to 200mH range
  ± (5% + 1d): 2H ranges

- **General Specifications**
  Power: 9V NEDA Battery
  Calibration Interval: 1 year
  Size: 7.4"(H) x 3.7"(W) x 1.3"(D)
  Weight: 0.5 lb
  Accessories:
  Operating manual, Test leads, Holster

Handheld High Accuracy LCR Meter

Z580

Z580

- Handheld and Battery operated
- Can be used for “ESR” measurements
- 5 digit dual display LCD
- Measures L, C, R, |Z|, Q ⁄ D
- Displays Component value, Q or D, Δ, or Δ%
- Auto ranging and Range hold
- Built-in comparator with 4 Bin-sorting functions
- Open and short circuit calibration for accurate zeroing
- Series and Parallel equivalent circuit modes
- 100Hz, 120Hz, 1KHz and 10KHz test frequencies
- Warning alarm for Pass or Fail binning
- Auto Power Off
- Easy to use

SPECIFICATIONS

Measured Components
L, (Inductance), C (Capacitance), R (Resistance) and Z (Impedance)
Measurement Circuit configurations: Series and Parallel

Measurements Resistance
Measured Parameter: R+ Q and |Z|
Measurement Ranges: R: 0.0001Ω to 999.9 MΩ

Inductance
Measured Parameter: L+Q
Measurement Range:
1µH to 9999H (100Hz & 120Hz)
0.1µH to 999.9(1 KHz and 10 KHz)

Capacitance
Measured Parameters: C+D
Measurement Range:
1pF to 9999µF (100Hz and 120Hz)
0.1pF to 999.9pF (1KHz and 10KHz)

D or Q
Measurement range: 0.0001 to 9999

Test Environment
Test Voltages and Frequencies:
0.3V (100Hz, 120Hz and 1KHz)
0.1V (10KHz)
Measurement rate: 3 Measurements / sec
Ranging Auto or Hold

Parameters Displayed
Primary Display: Measured value, Δ absolute, Δ%
Secondary Display: D or Q

Measurement Accuracy
Basic accuracy: ± 0.3% (See user manual for accuracy conditions)
Zero input correction: Open and short circuit

General Specifications
Power Requirements:
9 Volt rechargeable batteries or
12Volt @150mA AC to DC converter

Power Consumption: 25milliwatts

Operating Temperature:
0 to 40°C at ≤ 85% Relative Humidity

Dimensions:
Size: 3.54”(W) x7.9”(H) x 1.5”(D)
Weight: 1 lb

Accessories: Operating manual, 120V AC to 12V DC adapter, Test lead adapter with Kelvin clips, Rechargeable battery pack (installed)

1805 Single Output Power Supply

- 0 to ±18 Volts with 0 to ±5Amps load current
- Excellent Load, Line and Ripple specs
- Fully Isolated outputs terminals
- 3 digit Led displays for both current and Voltage
- Small case size
- Front panel Indicators for constant current and constant voltage operation
- Short circuit and Reverse Voltage protected

3003B Single Output Power Supply

- 0 to ±30V with 0 to ±3 Amps Load current
- Constant Voltage and Constant current operation
- Units can be connected together in series for Higher output voltage
- Course and Fine controls for accurate Voltage settings
- Low noise and Linear supply for powering sensitive circuits
- Front panel push button switch disconnects power supply from Load

1805

3003B

SPECIFICATIONS

[1805]

Output Volts: 0 to ±18V DC
Output Amps: 0 to ±5A
Constant Voltage Mode:
Load Regulation: 0.05% + 5.6mV
Line Regulation: 0.05% + 5.6mV
Ripple and Noise: 0.5mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 20mA
Line Regulation: 0.05% + 8mA
Ripple and Noise: 5mA RMS
Digital Display:
Type: 3 digit red LED
Resolution: Volts: 100mV; Amps: 10mA
Accuracy: Volts: ±(0.2% + 2d); Current: ±(1% + 3d)

General Specifications
AC Input Voltage: 120/220V selectable
Power Consumption: 170VA
Operating Temperature: 0 to 32°C (32 to 90°F)
Size: 6.3" (H) x 5.0" (W) x 13.0" (D)
Weight : 15 lbs
Supplied Accessories: Manual, Line cord, Test leads

[3003B]

Output Volts:
0 to ±30 V DC
Output Amps:
0 to ±3 Amps
Constant Voltage Mode:
Load and Line Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display Resolution:
Volts: 100mV; Amps: 10mA
Accuracy: ±(0.5% + 3d)

General Specifications
AC Input Voltage: 120/220V selectable
Power Consumption: 190VA
Operating Temperature: 0 to 32°C (32 to 90°F)
Size: 6.3" (H) x 5.0" (W) x 13.0" (D)
Weight : 15 lbs
Supplied Accessories: Manual, Line cord, Test leads

Single Output Power Supplies with Digital Displays

3005B Single Output Power Supply

- 0 to ±30V with 0 to ±5 Amps Load current
- Internal fan for cooler operation
- Excellent Line, Load and Ripple specifications
- Small case size
- Designed with energy saving circuitry
- Fully isolated output terminals for series operation
- Short circuit and Reverse Voltage protected

3006B Single Output Power Supply

- 0 to ±60V with 0 to ±1.5 Amps Load current
- Excellent Line, Load and Ripple specifications
- Short Circuit and Reverse Voltage protected
- Constant Voltage and Constant Current operation
- 3 digit Led displays for both current and Voltage
- Front panel Indicators for Constant Voltage and constant current operation

3005B

3006B

SPECIFICATIONS

[3005B]

Output Volts:
0 to ±30V DC
Output Amps:
0 to ±5Amps
Constant Voltage Mode:
Load and Line Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display:
Resolution: Volts: 100mV; Amps: 10mA
Accuracy: ±(0.5% + 3d)

General Specifications
AC Input Voltage: 120/220V selectable
Power Consumption: 133VA
Operating Temperature: 0 to 32°C (32 to 90°F)
Size: 6.3" (H) x 5.0" (W) x 13.0" (D)
Weight : 15 lbs
Supplied Accessories: Manual, Line cord, Test leads

[3006B]

Output Volts:
0 to ±60V DC
Output Amps:
0 to ±1.5A
Constant Voltage Mode:
Load and Line Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display:
Resolution: Volts: 100mV; Amps: 10mA
Accuracy: ±(0.5% + 3d)

General Specifications
AC Input Voltage: 120/220V selectable
Power Consumption: 190VA
Operating Temperature: 0 to 32°C (32 to 90°F)
Size: 6.3" (H) x 5.0" (W) x 13.0" (D)
Weight : 15 lbs
Supplied Accessories: Manual, Line cord, Test leads

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

3015B Dual Output Power Supply

- 0 to ±30V with ±1.5Amps load current
- Energy saver design allows cooler operation
- Excellent Load, line and Ripples specs
- Front panel indicators for Constant Current and Constant Voltage operation
- Each output has two 3 digit LED displays for monitoring Voltage and current

3032B Dual Output Power Supply

- 0 to ±30V with ±3.0 Amps load current
- Low noise Linear supply for powering sensitive circuits
- Fully isolated outputs for connecting outputs in series
- Excellent Load, line and Ripple specs
- Energy Saver design for cooler operation

3015B

3032B

SPECIFICATIONS

[3015B]

Outputs 1 and 2
Volts: 0 to ±30V DC
Amps: 0 to ±1.5A
Constant Voltage Mode:
Load Regulation: 0.02% + 2mV
Line Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display:
Resolution: Volts: 100mV; Current: 10mA
Accuracy: ±(0.5% + 3d)

General Specifications
AC Input Voltage: 120/220V
Power Consumption: 150VA, 50/60Hz
Operating Temperature: 0 to 35°C (32 to 95°F)
Size: 6.3" (H) × 9.2" (W) × 12.8" (D)
Weight: 16.5 lbs
Supplied Accessories: Manual, Line cord, Test Leads (2 sets)

[3032B]

Outputs 1 and 2
Volts: 0 to ±30V DC
Amps: 0 to ±3A
Constant Voltage Mode:
Load Regulation: 0.02% + 2mV
Line Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display:
Resolution: Volts: 100mV; Current: 10mA
Accuracy: ±(0.5% + 3d)

General Specifications
AC Input Voltage: 120/220V
Power Consumption: 300VA, 50/60Hz
Operating Temperature: 0 to 35°C (32 to 95°F)
Size: 6.3" (H) × 9.2" (W) × 12.8" (D)
Weight: 20 lbs
Supplied Accessories: Manual, Line cord, Test Leads (2 sets)

Triple Output Power Supplies with Digital Displays

3033B Triple Output Power Supply with Digital Displays

- Dual 0 to ±30V with 0 to ±1.5 Amps Load current outputs and a fixed 5Volt at 5 Amp output
- Both Variable outputs have a Voltage and Current display
- Series output tracking
- Small case size
- Excellent Line, Load and Ripple specifications

3040T Triple Output Power Supply with Series/Parallel Tracking

- Outputs may be independent or connected in Series or Parallel and are selectable from the front panel
- Fixed supply may be switched between 3.3V and 5.0V
- Series or Parallel Master/Slave tracking modes
- Energy saving design

3033B

3040T

SPECIFICATIONS

[3033B]

Outputs 1 and 2
Volts: 0 to ±30V DC
Amps: 0 to ±1.5A
Constant Voltage Mode:
Load and Load Regulation: 0.02% + 2mV
Ripple and Noise: 1mV RMS
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS
Digital Display (Outputs 1 & 2)
Resolution: Volts: 100mV; Current: 10mA
Accuracy: ±(0.5% + 3d)
Tracking Error: ±(0.5% + 10mV)

Output 3
Volts Max: 5V ±0.2.5%
Amps Max: 5A ±2.5%
Load Regulation: 0.2% + 2mV
Line Regulation: 0.2% + 2mV

General Specifications
AC input Voltage: 120/220V, 50/60Hz
Power Consumption: 192VA
Operating Temperature: 0 to 35°C (32 to 95°F)
Size: 6.3" (H) × 9.0" (W) × 13.0" (D)
Weight: 20 lbs
Supplied Accessories: Manual, Line cord, Test Leads (3 sets)

[3040T]

Outputs 1 and 2
Volts: 0 to ±36V DC
Amps: 0 to 2.5A
Constant Voltage Mode:
Line and Load Regulation: 0.02% + 2mV
Ripple and noise: 0.2mV RMS, 4mV P-P
Constant Current Mode:
Load Regulation: 0.05% + 5mA
Line Regulation: 0.05% + 0.25mA
Ripple and Noise: 2mA RMS, 10mA P-P
Digital Display (Outputs 1 and 2)
Resolution: Volts: 100mV; Current: 10mA
Accuracy: ±(0.5% + 1d)

Output 3
Volts Max: 3.3V / 5V ±2.5% (selectable)
Current Max: 5A ±2.5%
Load and Line Regulation: 0.1% + 5mV
Ripple: 2mV RMS

General Specifications
AC input Voltage: 120/220V, 50/60Hz
Power Consumption: 455VA
Operating Temperature: 0 to 35°C (32 to 95°F)
Size: 6.3" (H) x 9.0" (W) x 13.0" (D)
Weight: 16.5 lbs
Supplied Accessories: Manual, Line cord, Test Leads (3 sets)

Protek Test & Measurement
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Website: www.protektest.com Email: sales@protektest.com

"L Series"

3003L 3005L 6003L Single output DC Power Supplies with Fixed output

3003L Single output 30V @ 3A with one fixed output 5V @ 1A
3005L Single output 30V @ 5A with one fixed output 5V @ 1A
6003L Single output 60V @ 3A with one fixed output 5V @ 1A

- Ideal for production testing or School labs
- Designed for reliable operation
- Excellent Load and Line Regulation
- Low Noise and Ripple
- Output may be disconnected from load by pressing a button
- Two 3 digit LEDs displays for monitoring voltage and current
- Continuously adjustable fine and course Output voltage and Constant current controls

3003L / 3005L / 6003L

SPECIFICATIONS

3003L

- **Variable Output**
  Volts: 0 to ±30V DC
  Amps: 0 to 3Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% + 2mV
  Ripple and noise: ≤ 2.0 mV RMS
- **Constant Current Mode**
  Load Regulation: ≤ 0.2% + 3mA
  Line Regulation: ≤ 0.2% + 0.3mA
  Ripple and noise: ≤ 3mA RMS
- **Digital Display**
  Accuracy:
  Voltmeter: ±(0.2% rdg + 2d)
  Amps: ±(1.0% rdg + 2d)
  Resolution:
  Voltmeter: 0.1V
  Ammeter: 0.01A
- **Fixed output**
  Voltage: 5Volts
  Amps: 1Amp
  Voltage Accuracy: ± 1.0%
  Ripple and Noise: ≤ 2mV RMS

3005L

- **Variable Output**
  Volts: 0 to ±30V DC
  Amps: 0 to 5 Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤ 2.0mV RMS
- **Constant Current Mode**
  Load Regulation: ≤ 0.2% +3mA
  Line Regulation: ≤ 0.2% +0.3mA
  Ripple and noise: ≤ 3mA RMS
- **Digital Display**
  Accuracy:
  Voltmeter: ±(0.2% rdg + 2d)
  Ammeter: ±(1.0% rdg + 2d)
  Resolution:
  Voltmeter: 0.1V
  Ammeter: 0.01A
- **Fixed output**
  Voltage: 5Volts
  Amps: 1Amp
  Voltage Accuracy: ± 1.0%
  Ripple and Noise: ≤ 2mV RMS

6003L

- **Variable Output**
  Volts: 0 to ±60V DC
  Amps: 0 to 3Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤ 2.0 mV RMS
- **Constant Current Mode**
  Load Regulation: ≤ 0.2% +3mA
  Line Regulation: ≤ 0.2% +0.3mA
  Ripple and noise: ≤ 3mA RMS
- **Digital Display**
  Accuracy:
  Voltmeter: ±(0.2% rdg + 2d)
  Amps: ±(1.0% rdg + 2d)
  Resolution:
  Voltmeter: 0.1V
  Amps: 0.01A
- **Fixed output**
  Voltage: 5Volts
  Amps: 1Amp
  Voltage Accuracy: ± 1.0%
  Ripple and Noise: ≤ 2mV RMS

General Specifications (All Models)

AC Input Voltage: 110V to 127V @ 60Hz
220V to 240V @ 50Hz selectable

Dimensions
Size: 5.1"(W) x 6.3"(H) x 12.2"(D)
Weight: 14 lbs (3005L, 6003L), 11 lbs (3003L)

Environmental
Storage Temp: -10°C to 70°C @ < 70% R.H
(-14°F to 158°F)
Operating Temp: 0°C to 40°C @ < 80% R.H
(32°F to 104°F)
Temperature Coefficient: 300ppm/ °C
Accessories: Operating manual and AC Line Cord

Dual output DC Power Supplies with LED Displays

"L Series"
3203L
3205L

3203L / 3205L

3203L Dual output 30V @ 3A

3205L Dual output 30V @ 5A

- Constant voltage or Constant current operation
- Outputs may be connected in series or parallel
- Designed for reliable operation
- Excellent Load and Line Regulation
- Low Noise and Ripple
- Two 3 digit LEDs displays monitor voltage and current for each output
- Continuously adjustable voltage and current limiting

SPECIFICATIONS

3203L

- **Outputs 1 and 2**
  Volts: 0 to ±30V DC
  Amps: 0 to 3 Amps

- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% + 2mV
  Ripple and noise: ≤ 2.0mV RMS

- **Constant Current Mode**
  Load Regulation: ≤ 0.3% + 3mA
  Line Regulation: ≤ 0.3% + 0.3mA
  Ripple and Noise: ≤ 3mA RMS

- **Digital Display**
  Accuracy: Voltmeter: ±(0.2% rdg + 2d)
  Amps: ±(1.0% rdg + 2d)
  Resolution: Volts: 0.1V
  Amps: 0.01A

3205L

- **Outputs 1 and 2**
  Volts: 0 to ±30V DC
  Amps: 0 to 5 Amps

- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤ 2.0 mV RMS

- **Constant Current Mode**
  Load Regulation: ≤ 0.3% +3mA
  Line Regulation: ≤ 0.3% +0.3mA
  Ripple and Noise: ≤ 3mA RMS

- **Digital Display**
  Accuracy: Volt: ±(0.2% rdg + 2d)
  Amps: ±(1.0% rdg + 2d)
  Resolution: Volt: 0.1V
  Amps: 0.01A

General Specifications (both units)

AC Input Voltage: 110V to 127V @ 60Hz
220V to 240V @ 50Hz selectable

Dimensions
Size: 10.2"(W) x 6.3"(H) x 13"(D)
Weight: 15.4 lbs

Environmental:
Storage Temp: -10°C to 70°C @ < 70% R.H
(-14°F to 158°F)
Operating Temp: 0°C to 40°C @ < 80% R.H
(32°F to 104°F)
Temperature Coefficient: 300ppm/ °C
Accessories: Operating manual and AC Line cord

"L Series"

3303L
3305L

Triple output DC Power Supplies with LED Display

3303L Dual output 30V @ 3A with one fixed output 5V @ 3A

3305L Dual output 30V @ 5A with one fixed output 5V @ 3A

- Constant voltage or Constant current operation
- Outputs may be connected in series or parallel
- Designed for reliable operation
- Excellent Load and Line Regulation
- Low Noise and Ripple
- Two 3 digit LEDs displays monitor voltage and current for each output
- Continuously adjustable Output voltage and current limiting

3303L / 3305L

SPECIFICATIONS

3303L

- **Outputs 1 and 2**
  Volts: 0 to ±30V DC
  Amps: 0 to 3 Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤ 2.0mV RMS
- **Constant Current Mode**
  Load Regulation: ≤ 0.2% +3mA
  Line Regulation: ≤ 0.2% +0.3mA
  Ripple and Noise: ≤ 3mA RMS
- **Digital Display**
  Accuracy: Volts: ± (0.2% rdg + 2d)
  Amps: ± (1.0% rdg + 2d)
  Resolution: Volts: 0.1V
  Amps: 0.01A
- **Fixed output**
  Voltage: 5 Volts
  Amps: 3 Amps
  Voltage Accuracy: ± 1.0%
  Ripple and Noise: ≤ 2mV RMS

3305L

- **Outputs 1 and 2**
  Volts: 0 to ±30V DC
  Amps: 0 to 5 Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 3mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤ 2.0mV RMS
- **Constant Current Mode**
  Load Regulation: ≤ 0.2% +3mA
  Line Regulation: ≤ 0.2% +0.3mA
  Ripple and Noise: ≤ 3mA RMS
- **Digital Display**
  Accuracy: Volts: ± (0.2% rdg + 2d)
  Amps: ± (1.0% rdg + 2d)
  Resolution: Volts: 0.1V
  Amps: 0.01A
- **Fixed output**
  Voltage: 5 Volts
  Amps: 3 Amps
  Voltage Accuracy: ± 1.0%
  Ripple and Noise: ≤ 2mV RMS

General Specifications (both units)

AC Input Voltage: 110V to 127V @ 60Hz
220V to 240V @ 50Hz selectable

Dimensions
Size: 10.2"(W) x 6.3"(H) x 13"(D)
Weight: 20 lbs (3305L), 15.4 lbs (3303L)

Environmental
Storage Temp: -10°C to 70°C @ < 70% R.H
(-14°F to 158°F)
Operating Temp: 0°C to 40°C @ < 80% R.H
(32°F to 104°F)
Temperature Coefficient: 300ppm/ °C
Accessories: Operating manual and AC Line cord

Analog Meter Readout Power Supply

"L Series"
305L
310L

305L

310L

305L 0 to ±30V @ 0 to ±5 Amps
310L 0 to ±30V @ 0 to ±10 Amps

- Ideal for Production testing or school labs
- Designed for reliable operation
- Excellent load and line regulation
- Low noise and ripple
- Continuously adjustable voltage
- Analog meter readout for both voltage and current
- Cooler operation and high efficiency

SPECIFICATIONS

305L

- **Variable Output**
  Volts: 0 to ± 30V DC
  Amps: 0 to ± 5 Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 1V
  Load Regulation: 0.01% + 5mV
  Ripple and noise: ≤ 1.0mV RMS
- **Constant Current Mode**
  Line Regulation: ≤ 0.2% + 1.0mA
  Load Regulation: ≤ 0.2% + 5mA
  Ripple and noise: ≤ 3mA RMS
- **Analog Display**
  Accuracy: Volts: ±(2.0% F.S.)
  Amps: ±(2.0% F.S.)

310L

- **Variable Output**
  Volts: 0 to ± 30V DC
  Amps: 0 to ± 10 Amps
- **Constant Voltage Mode**
  Line Regulation: 0.01% + 1V
  Load Regulation: 0.01% + 5mV
  Ripple and noise: ≤ 1.0 mV RMS
- **Constant Current Mode**
  Line Regulation: ≤ 0.2% + 1.0mA
  Load Regulation: ≤ 0.2% + 5mA
  Ripple and noise: ≤ 3mA RMS
- **Analog Display**
  Accuracy: Volts: ±(2.0% F.S.)
  Amps: ±(2.0% F.S.)

General Specifications (both units)

AC Input Voltage: 110V to 127V @ 60Hz
220V to 240V @ 50Hz selectable

Dimensions

Size: 5"(W) x 6.1"(H) x 9.5"(D) (305L)
10"(W) x 6.3"(H) x 12.25"(D) (310L)

Weight: 20 lbs (310L), 10 lbs (305L)

Environmental:

Storage Temp: -10°C to 70°C @ < 70% R.H
(-14°F to 158°F)

Operating Temp: 0°C to 40°C @ < 80% R.H
(32°F to 104°F)

Temperature Coefficient: 300ppm/ °C

Accessories: Operating manual and AC Line cord

1230S
1820S
3610S
6006S

High Current Switching DC Power Supplies with LED Displays

- 4 models to choose from with Load currents to 30Amps
- Constant voltage or Constant current operation
- Excellent Line, Load and Ripple specification
- Coarse and Fine voltage controls
- Light weight and very good efficiency
- Remote sensing
- Short circuit and overload protection
- 3 digit LED read out for both Volts and Amps
- Cooling fan
- Constant voltage and Constant current indicators

1230S / 1820S / 3610S / 6006S

Models

1230S
Volts: 0 to ±12V DC
Amps: 0 to ±30Amps

1820S
Volts: 0 to ±18V DC
Amps: 0 to ±20Amps

3610S
Volts: 0 to ±36V DC
Amps: 0 to ±10Amps

6006S
Volts: 0 to ±60V DC
Amps: 0 to ±6Amps

SPECIFICATIONS

Regulation

- **Constant Voltage Mode**
  Line Regulation: 0.01% + 2mV
  Load Regulation: 0.01% +2mV
  Ripple and noise: ≤5 mV RMS, 100mV peak

- **Constant Voltage Mode**
  Line Regulation: ≤0.01% +2mA
  Load Regulation: ≤0.01% +0.2mA

Ripple and noise:

1230S: ≤30mA RMS
3610S: ≤5mA RMS
1820S: ≤10mA RMS
6006S: ≤3mA RMS

- **Digital Display**
  Number of digits: Volts: 3 Amps: 3 1/2
  Resolution: Volts: 0.1V Amps: 10mA
  Accuracy: ±(0.5%+2D) Volts & Amps

General Specifications (All Models)

AC Input Voltage:
97 to 133V @ 60Hz or 195 to 250V @ 50Hz
Input Power: 500 watts, 900VA
Operating Temperature:
0°C to 40°C (32°F to 104°F) @ <80% R.H.

Dimensions
Size: 5.4”(W) x 6.4”(H) x 11.4”(D)
Weight: 7.7 lbs

Accessories
Operating manual, AC line cord and Test leads

Programmable Power Supply

- All values may be entered from keyboard or rotary dial
- RS –232/485 interface with cable, adapter and software CD
- Volts, amps and power are displayed on a backlit LCD display
- 10 settings may be stored in memory
- Light weight and energy efficient
- Over voltage and current protection
- Outstanding in Production Test Applications

P6000

SPECIFICATIONS

Output Voltage
Range: 0 to ±36V
Voltage Resolution:
1mV: 0 to 3.999V
10mV: 4 to 36V

Output Amps
Range: 0 to ±3A
Amps Resolution: 1mA

Constant Voltage Mode
Load Regulation: ±0.02% + 10mV
Line Regulation: 0 to 3.999V: ±0.01% + 3mV
4 to 36V: ±0.02% + 10mV
Ripple: ≤1mV RMS

Constant Current Mode
Load Regulation: ±0.02% + 10mV
Line Regulation: ±0.02% + 10mV
Ripple and noise: ≤4mV Rms

Program Accuracy (25 °C)
Voltage: 0.1% + 20mV
Current: 0.1% + 20mA

Read Back Accuracy (25 °C)
Voltage: 0 to 19.999V: 0.2% + 20mV
20 to 36V: 0.2% + 100mV
Current: 0.2% + 20mA

Program Resolution
Voltage: 0 to 3.999V: 1mV; 4 to 36V: 10mV
Current: 1mA

Read back Resolution
Voltage: 0 to 19.999V: 10mV; 20 to 36V: 100mV
Current: 1mA

Interface
RS-232 adapter and cables

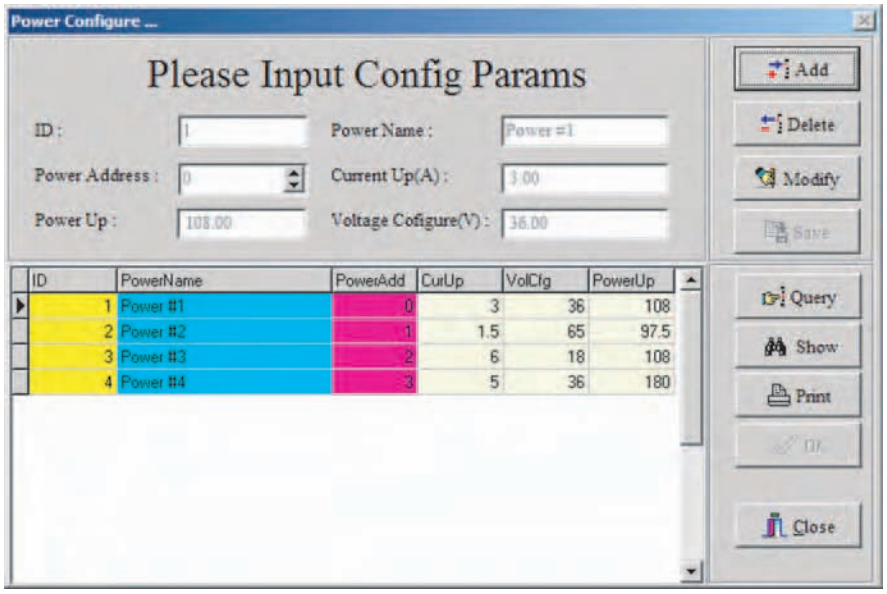
Software
Power MS Power Management software
ActiveX and DLL Support tools for VC++/VB /Delphi /LabView
(upon request)

Memory
10 Locations EEPROM for saving power settings

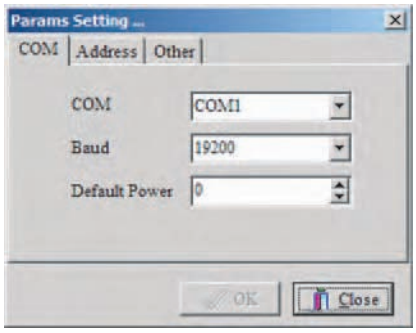
Protection
Over voltage, over current and power

General Specifications
AC Input Volts: 110/220V, 50/60Hz
Power Consumption: 200VA
Operating Temp: 0 to 50°C (32 to 120°F) at relative humidity of 0 to 80%
Size: 3.5" (H) x 8.3" (W) x 9.8" (D)
Weight: 13.2 lbs
Supplied Accessories: Manual, Line cord, Handels, RS-232 adapter and cables
Optional Accessories: USB adapter and cables

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

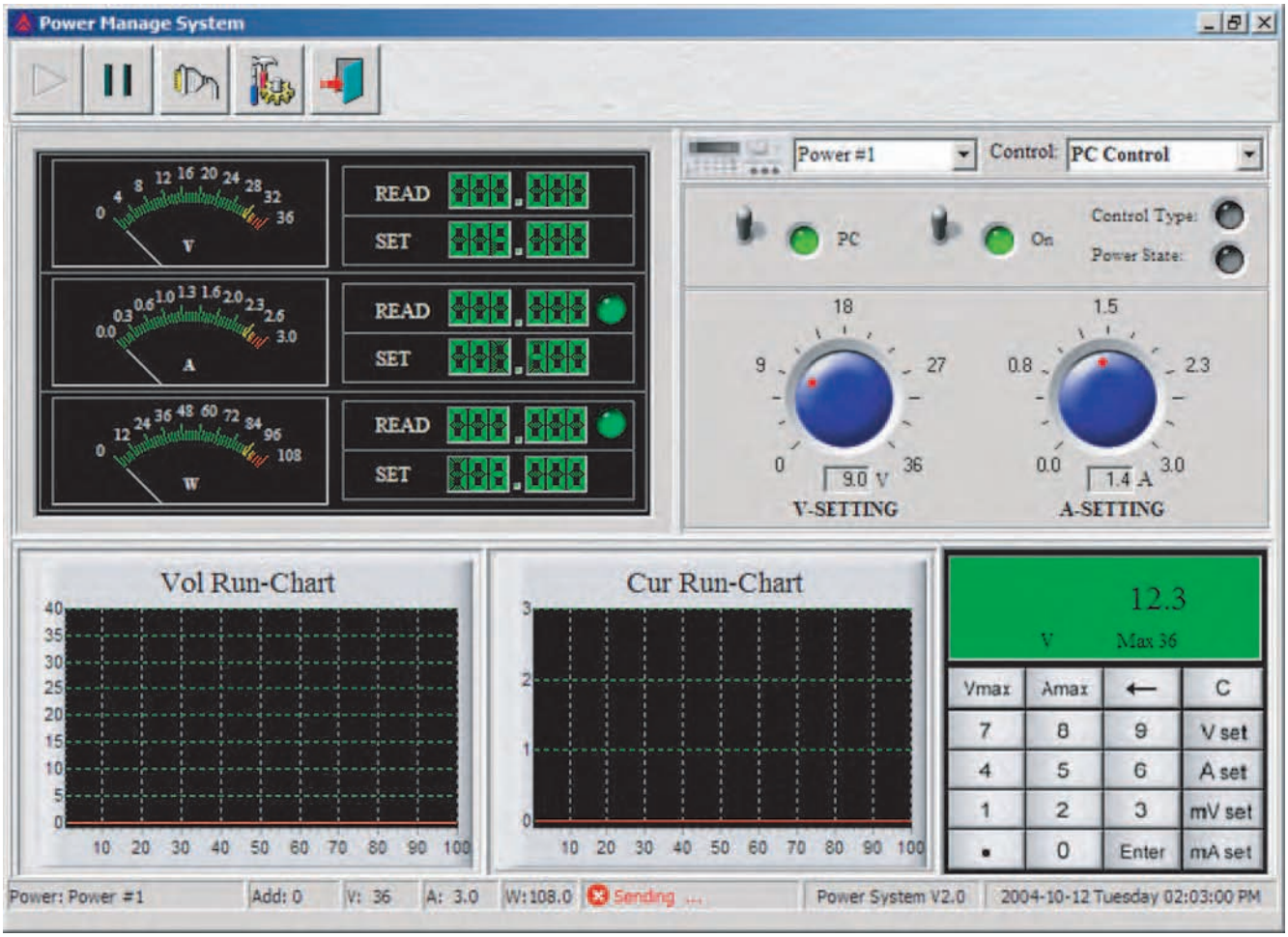


Configuration screen: Program up to 16 model P6000 Power Supplies from this screen.



Communication Setting: Used to configure communication related settings.

Software



Main screen: Displays feedback from the hardware and allows the user to control various parameters directly from the computer software.

Programmable 300W Electronic Load

- 300W Maximum Power
- Operates in Constant current, Constant resistance or Constant power modes
- 1mA current setting resolution
- Voltage, Current and Power are displayed on the back lit display
- Back light LCD
- Values may be enter from key board of rotary dial
- RS232 interface and control software
- Small size and light weight

L300

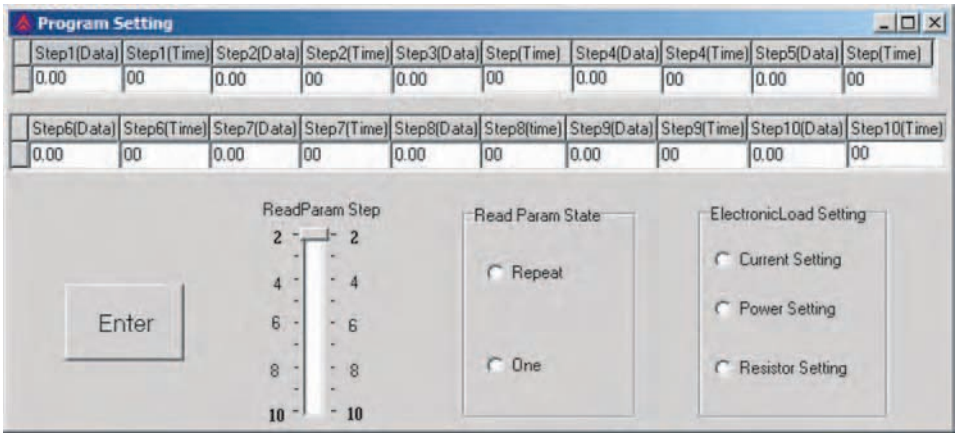
SPECIFICATIONS

Inputs:
1
Input Volts:
0 to 360V
Input Current:
0 to 30A
Input Power:
0 to 300W
Operating Modes:
Constant current, Constant Resistance or Constant power
Voltage Resolutions:
0.000V to 3.999V ±(0.2% + 3mV)
4.00V to 35.999V ±(0.2% + 30mV)
36.0V to 360.0V ±(0.2% + 30mV)
Current Resolutions:
0.000A to 2.999A ±(0.2% + 3mA)
3.00A to 35.999 A ±(0.2% + 3mA)
Current Setting Resolution:
1mA (0 to 2.999A), 10mA (3.00A to 30A)
Power Setting Resolution:
0.1W (0 to 300W)
Resistance Setting Resolution:
0.01Ω (0 to 99.99Ω), 0.1Ω (100 to 500Ω)

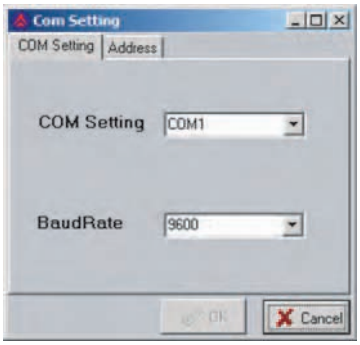
Minimum Resistance:
< 0.08Ω
Ripple:
< 10mV P-P
Protection:
Over Voltage, Over Current, Over power, Over Heating and Reverse polarity
Power:
120/220V, 50/60Hz
Communication:
RS232 or RS485
Memory:
10 setups may be stored and recalled
Software:
Monitor software CD. ActiveX modules for VC++, Visual basic, Delphi and LabView upon request.

General Specifications
Size: 3.5" (H) x 8.3" (W) x 9.8" (D)
Weight: 11 lbs
Supplied Accessories: Manual, Line cord, Handles, RS-232 adapter and Cables
Optional Accessories: USB adapter and Cable

Protek Test & Measurement
45 Smith Street, Englewood, NJ 07631 Tel: 201-818-7711 Fax: 201-760-9888
Website: www.protektest.com Email: sales@protektest.com

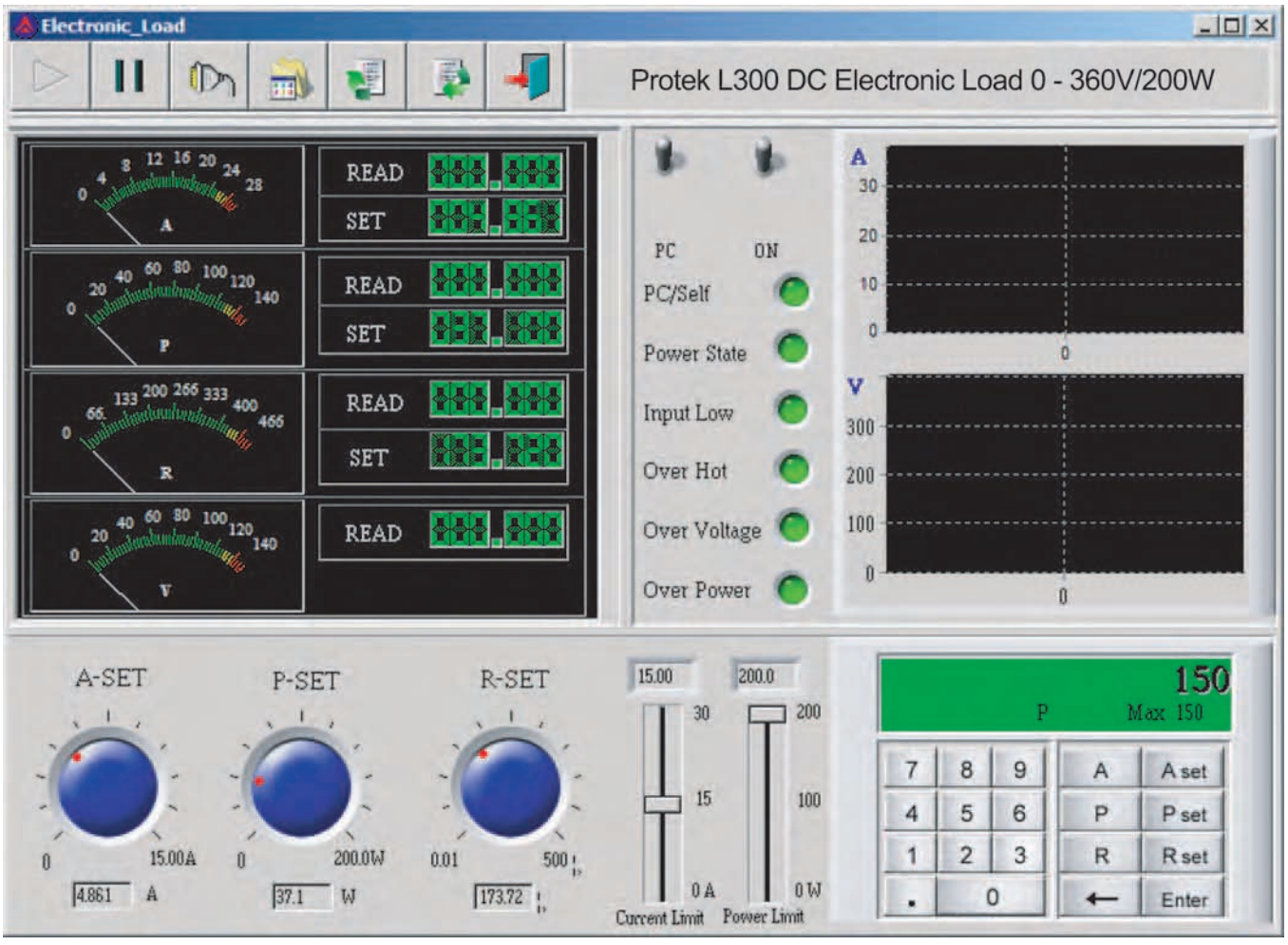


Configuration screen: Allows the user to set various parameters for the program.



Communication Setting: Used to configure communication related settings.

Software



Main screen: Displays feedback from the hardware and allows the user to control various parameters directly from the computer software.

Handheld Digital Insulation Tester

DI2001
DI2002

DI2001

DI2002

DI2001

- Insulation resistance to 2000MΩ
- 250V, 500V and 1000V test voltages
- Meets IEC 1010-1, Category III-600V safety standards
- Data and Max hold
- 3½ digit, 2000 count LCD
- Continuity buzzer

DI2002

- Measures Insulation resistance to 2000MΩ
- Measures AC volts, DC volts, Resistance and Continuity
- 3½ digit, 2000 count LCD and Data hold
- Designed to IEC-1010-1 CATII 1000V and CATIII 600V safety standards
- Rugged plastic case and carrying bag
- 250V, 500V and 1000V test voltages
- Audible and visual indicators when high voltage is on

SPECIFICATIONS

DI2001

- **Mega Ohms**
  Ranges: 0 to 250MΩ @ 250V
  0 to 250MΩ @ 500V
  0 to 2000MΩ @ 1000V
  Resolution: 0.1MΩ (250MΩ Range)
  1.0MΩ (2000MΩ Range)
  Accuracy: ±(3% + 5d)

- **DC Volts**
  Range: 0 to 1000V; Resolution: 1V
  Accuracy: ± (0.5% rdg + 1 digit)
  Max. Input V: 700V AC RMS or 1000V DC

- **AC Volts**
  Range: 0 to 750V
  Resolution: 1V
  Accuracy: ± (0.8% rdg + 5 digit)
  Max. Input V: 700V AC RMS or 1000V DC

- **General Specifications**
  Power: (8) 1.5V AA batteries
  Size: 6.3”(H), x 3.8”(W) x 2.0”(D) Weight: 1.06 lbs
  Accessories: Plastic carrying case, Cloth carrying bag, Test probes, Test leads with alligator clips, Operating manual, (6) AA batteries

DI2002

- **Mega Ohms**

Range:	Test Voltage:	Test Current:
200MΩ	250V ± 10%	1mA @ 0.25MΩ
200MΩ	500V ± 10%	1mA @ 0.5MΩ
2000MΩ	1000V ± 10%	1mA @ 1MΩ

  Accuracies: ±(3% rdg + 5 digit) 0 to 1000MΩ
  ±(5% rdg + 5 digit) 1000MΩ to 2000MΩ
  Short circuit current: <2.5mA
  Test times: Manual, 1 min, 2 min and 4 min

- **Resistance**
  Range: 0 to 200Ω
  Resolution: 0.1 DC Volts:
  Range: 0 to 1000V
  Resolution: 1V
  Accuracy: ±(1.0% rdg + 3 digit)

- **DC Volts**
  Range: 0 to 1000V; Resolution: 1V
  Accuracy: ±(0.8% rdg + 3 digit)
  Max. Input V: 700V AC RMS or 1000V DC

- **AC Volts**
  Range: 0 to 700V
  Resolution: 1V
  Accuracy: ±(1.2% rdg + 5 digit)
  Max. Input V: 700V AC RMS or 1000V DC

- **General Specifications**
  Power: (6) 1.5V AA batteries
  Size: 7.5”(H), x4.8”(W) x 2.2”(D) Weight: 1.2 lbs
  Accessories: Plastic Carrying case, Cloth carrying bag, Test probes, Test leads with alligator clips, (6) AA batteries Operating manual

DA2005 High Voltage Digital + Analog Readout Insulation Tester

- Measures insulation resistance to 100,000 MΩ
- 2,500V output test voltage to probe
- Two auto ranging analog scales indicated by a flashing red or green led
- Output test voltage is read out on a 3½ digit DMM
- Rugged water proof plastic case for extreme environmental conditions
- Audible and visual indicators when high voltage is on
- Built to IEC 1010-1 and catII 5000V safety standards
- Internal battery check

DA2005

SPECIFICATIONS

Insulation Measurement

Insulation measuring ranges (Auto ranging)

Range:

Red Scale:	Green Scale:
0 to 2000MΩ	1000MΩ to 100,000MΩ

Accuracies

Temperature and R.H	Insulation Resistance	Accuracy
23ºC ± 5ºC @ <70% R.H	0 to 100MΩ	± 3.0% of arc
	100MΩ to 50,000MΩ	± 2.5% of arc
	50,000MΩ to 100,000 MΩ	± 3.0% of arc
0ºC to 40ºC @ < 85% R.H	0 to 100MΩ	± 6.0% of arc
	100MΩ to 50,000MΩ	± 5.0% of arc
	50,000MΩ to 100,000MΩ	± 6.0% of arc

General Specifications

Power: (8) 1.5V AA batteries and (1) 9V battery

Size: 9.0”(H) x 5.4”(W) x 3.2”(D)

Weight: 2.64 lbs

Operating Temperature: 0ºC to 40ºC (32ºF to 104ºF) @ ≤ 85% R.H.

Storage Temperature: -10ºC to 50ºC (10ºF to 122ºF)

Accessories:

Delux carrying bag, Test probes,
Test leads with alligator clips, Operating manual, (8) AA batteries and (1) 9V battery

SL1700 Digital Sound Level Meter
SL1701 Data logging Sound Level Meter w/RS232 interface

SL1700

- Wide dynamic range
- A and C weighting
- 3 ½ digit back lit LCD display with Analog bar graph
- Date and time displayed on LCD
- Auto/Manual ranging and Maximum hold
- AC and DC auxiliary outputs
- Selectable slow and fast response time
- Meets IEC651 Type 2 and ANSI S1.4 type 2 standards

SL1701

- Records 16,000 data point in internal memory
- Optically isolated RS232 interface with cable and software.
- Wide measurement range
- A and C weighting
- 3 ½ digit back lit LCD display with Analog bargraph
- Date and time displayed on LCD
- Auto/Manual ranging and Maximum hold
- AC and DC auxiliary outputs
- Selectable slow and fast response time
- Meets IEC651 Type 2 and ANSI S1.4 type 2 standards

SL1700 / SL1701

SPECIFICATIONS [both units]

- **Sound level**

  Measurement ranges:
  Auto Range: 30dB to 130dB
  Manual Range: 30dB to 130dB in (6) 50dB ranges
  Dynamic range: 50dB
  Accuracy: ±1.5dB
  Resolution: 0.1dB
  Frequency range: 30Hz to 8 KHz
  Frequency weighting: A and C
  Response time: 125mS (fast) and 1S (slow)
  Microphone: 0.5" Electret condenser type

- **Data logging** Model SL1701

  Memory: 16,000 locations

- **Output**

  AC Signal:
  Level: 0.707V RMS FS for each range
  Impedance: 600Ω

  DC signal:
  Level: 10mV/dB
  Impedance:100Ω

- **General Specifications**

  LCD Display: 4 digit; Update rate: 2 times/sec

  Analog bargraph:
  1dB per bar; update rate: 20 times/sec

  Power: (6) 1,5V AAA batteries

  Size: 9.6"(L) x 3.1"(W) x 1.4"(D)

  Weight: 1 lb

  Accessories: Ear phone plug, Operating manual, (6) 1.5V AAA batteries, Windscreen, RS232 Cable and Software SL1701

Non - Contact Infrared Thermometers

T603
T605

- Wide Temperature measurement range
- Laser target pointer
- Readout is ºF & ºC selectable
- 4 digit, Dual back lit LCD Display
- Min / Max / AVG
- LCD Displays Emissivity
- Auto power Off
- 12 : 1 Distance: Spot ratio

SPECIFICATIONS [both units]

Thermometer Specifications

Measurement Range:
T603 -20º C to 530º C (-4º F to 986º F)
T605 -20º C to 850º C (-4 F to 1562º F)

Accuracy: -20º C to 50º C: ± 2.5º C
51º C to 850º C: ± (1.5% rdg + 1º C)

Resolution: 0.1º C or F

Spectral Response: 8µm to 14µm

Response Time: 0.5 sec

Emissivity: 0.95 fixed

Field of View (D:S): 12:1

Laser Power: 1mW

General Specifications

LCD: 4 Digit Dual display

Auto Power Off: 10 Seconds

Operating Temperature: 0ºC to 40ºC (32ºF to 104ºF)

Storage Temperature: -10º C to 60º C (14ºF to 140ºF)

Dimensions: 2.2”(H) x 6.4”(W) x 7.5”(D)

Weight: 0.6 lb (including battery)

Power: 9V battery

Accessories: Operating manual, 9V battery and Carrying case

OSCILLOSCOPE PROBES

PP-60 PP-100 PP-200 PP-300

	PP-60	PP-100	PP-200	PP-300
Characteristic	Specifications		Performance Requirements	
Attenuation	X1		X10	
Input Capacity	85pF-115pF	18.5pF-22.5pF	75pF-105pF	13.5pF-18.5pF
Oscilloscope Input capacity	15-40pF		15-30pF	
Input Resistance	1M Ohm	10M Ohm	1M Ohm	10M Ohm
Band width	X1: DC to 6MHz X10: DC to 60MHz	X1: DC to 6MHz X10: DC to 100MHz	X1: DC to 6MHz X10: DC to 200MHz	X1: DC to 6MHz X10: DC to 300MHz
Max input Voltage	X1: <200V DC+Peak AC X10: <600V DC+Peak AC			

PROBES & TEST LEADS

TP35
'K' type temp. probe for models TM1300K, D910F, D981, A421, 506, 608, 610, B4000

TP25
TP-25: Temp. probe for model A480B

Test Leads:

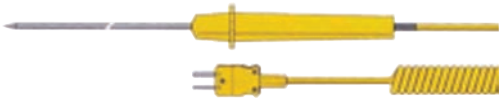
TL101	A413, A410B, A800, A801
TL102	D901, A403
TL206	305, 307
TL250	A480B, D640AB, D1200D, BT407
TL501	B845, D910F, D980, D981, B4000, B4100, S2401, S2405, TM1300K, 304, 505, 506,
TL505	A802, 608, 610, A421, A450

[TL102]
[TL206]

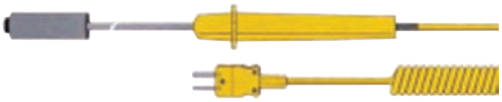
[TL250]
[TL501]
[TL505]

[TL101]

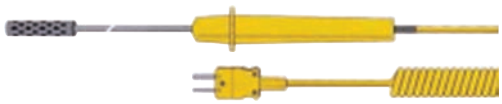
TP111 Universal K Type Immersion Probe
Temp Range: -40°F to 1562°F, -40°C to 850°C



TP112 Universal K Type Surface Probe
Temp Range: -40°F to 950°F, -40°C to 510°C



TP113 Universal K Type Air Probe
Temp Range: -40°F to 500°F, -40°C to 250°C



TP115 Universal K Type General Purpose Probe
Temp Range: -40°F to 1562°F, -40°C to 850°C